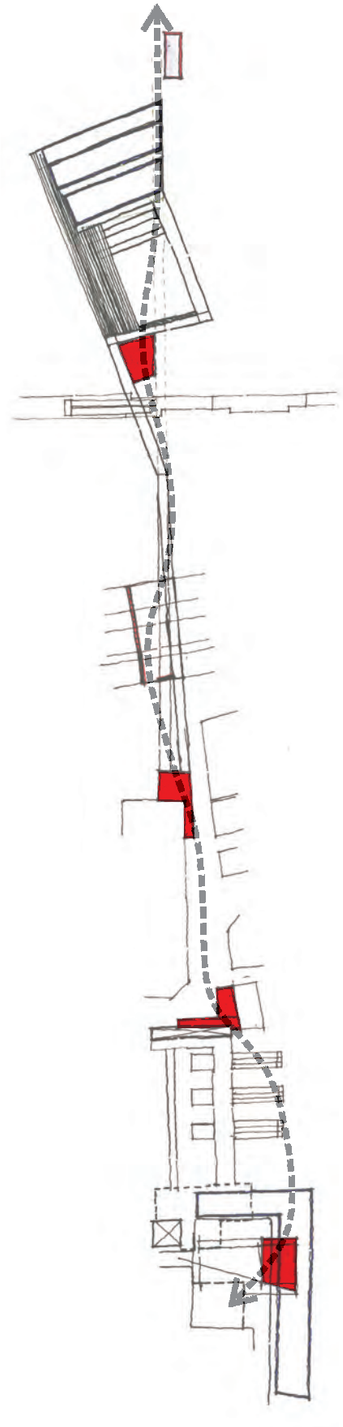

The Watched Towers:
Creating disjunction in a river of movement

Imraan Begg

The Watched Towers:
creating disjunction in a river of movement

By Imraan Begg

Design Research Project APG5079W

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This dissertation is presented as part fulfillment of the degree of Master of Architecture (Professional). School of Architecture, Planning and Geomatics, University of Cape Town

16 October 2013

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I would firstly like to thank my parents for all the support and strength they gave me throughout the year, I could not have done it without them.

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Finally, to my Creator who makes it all possible.

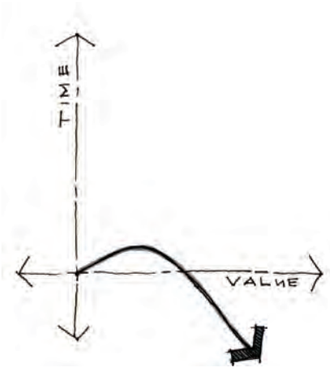
Abstract

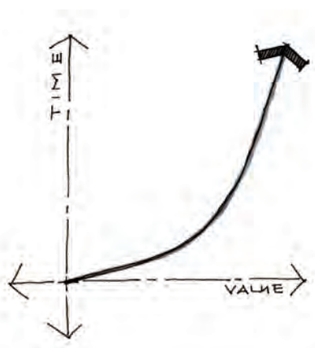
This dissertation is on how architecture can heighten the experience of a route through disjunction and weathering. My motivation for the route is driven by my fascination with movement along an existing spine, which stretches 700 metres from Woodstock station to the harbours edge. The route crosses eight different types of private and public transport modes offering different options. The route is made up of a series of existing 'disjunctions', which incorporates, inclines and declines including a 360 metre continuously raised footbridge.

The approach uses the principles of Tschumi's 'superimpositions' to create disjunction in the architecture, together with the effects of natural and social weathering, to heighten the experience of the route. The project approach combines the existing layers of movement (the route), points (moments of intensity) and surfaces (weathering, social and natural) to activate the existing spine. Furthermore, it draws from the historical reference of the 'French lines' which once existed as fortifications separating Woodstock from the CBD. A series of pavilions designed to work within respective locations, using natural and social interaction to generate character through the architecture over time. Each pavilion acts as a regular moment in the landscape with typical and specific functions providing security and infrastructure over the entire route.

The result is a route driven essentially by commuter movement, but disjoined at points to allow for physical and social interaction and alternative experience in the spaces. Moments of delay, rerouting, stopping etc. exist, at the same time allowing for the architectural experience of the route to manifest character over time. These moments further use the effect of environmental weathering on the buildings aesthetic as a continuous generator of character.

The experience of walking may be seen as the kind of writing on the surface of the ground, it is a trace of movement which seem to discover a particular place. Fragments of various hypothetical movement patterns generate a geometry that becomes woven into reality in such a way that it is capable of engendering new shapes. These traces occupy the entire space. **Quiros et al (2001).**





(left) Figure 1: " Current architectural value under the influence of weathering over time" - by author

(right) Figure 2: " Predicted vision of building's value over time" - by author

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Preface

The fondest memories of my childhood are the times when a moment in my life becomes evident through an activation years later. *"I clearly remember my mother and I would travel by public transport to the city, every Wednesday to be exact. Whether the sun was shining or it rained, we would move through the busy city, from store to store. With my hand firmly gripped, I would use my other hand to feel the buildings surfaces; I remember the roughness, the smoothness, and the intensity. My eyes remember what I felt and saw, I remember feeling dominated by those concrete masses of different colours, tones and textures"*. Years later these buildings have changed, in colour, and texture; they have become older, darker, and more beautiful, not only in physical appearance but in the mental image of memory that my brain possesses… I ask myself the question, why? Was it because we walked the same route every week?

Similarly as a child I walked, ran or cycled, these were 'my' modes of transport. *"Cycling down a hill, falling and scraping my skin, bleeding… but getting up and trying it again, are all about being naïve; my body is marked with memory. The sounds of rubber wheels racing on tarred roads, the texture, the movement, the smell, feeling free against the wind…"* cycling through the streets of Salt River and Woodstock was a daily ritual… certain places my parents forbade me to go… but I did anyway. Why is it that those very places became part of my fondest memories… years later when I now drive through these streets, I remember what I saw. Same journey, different experience…

I often reminisce about my childhood, how I explored my way through life. I learnt new things every day. My life is made up of layers, textures, and moments… memories. I look back at how time has passed, and how I grew up to be who I am, but my childhood remains an important reminder of where I come from. Those indelible memories are the textures of my life… This is what fascinates me about architecture, the potential to create a personal connection, and after so many years when I re-enact these rituals, I remember what I saw and did as a child. Years have passed and these buildings and spaces have changed, the streets have become wider, the spaces more vibrant, but the memory remains.

Introduction

In order to move between destinations we follow a route that at times, these routes are undefined or it is the best possible option to take. A route is a movement course taken between home and work, home and school i.e. between destinations etc. Over time, these routes become part of a daily movement routine, through walking, private vehicles, public transport etc. The inevitability of a destination on route is likely to be questioned by focusing on other issues such as "what to have for lunch", or "what groceries to buy". However, by changing ones daily movement pattern, the focus becomes the destination, simply because of the new route taken. The focus for this project looks at how, through weathering and disjunction, the experience of a route can be heightened.

Over time buildings and spaces deteriorate, this is known as weathering. For the purpose of this project weathering is studied under two conditions. Firstly, it looks at natural weathering and the effects of the environment on buildings and spaces. The aim is to understand how buildings deteriorate and how its layers are altered when under the influence of the environment. Secondly, it looks at social weathering, which can be defined as the indirect effect users have on buildings and how over time they mark the spaces with movement patterns and activity. As Mostafavi and Leatherbarrow state in their introduction *On Weathering, the life of buildings in time* (1993: 5), Finishing ends construction, weathering constructs finishes. This asserts an understanding that architecture will always be under the influence of natural and social forces. The argument aims to justify the consequences of the social and natural environmental effects that provide character to the architecture.

Character in this context can be described as the richness in its architecture caused by change in a materials, colours, texture etc. over time. Furthermore, this character adds an additional layer to the surface hierarchy altered by the process of weathering and with changing surfaces intensifying character. This project furthermore aims to intensify route by way of a change in spatial ordering, also known as 'disjunction'.

'Disjunction in architecture' is a term coined by architect Bernard Tschumi, it is a method used in his work aimed at changing the traditional order of space. Parc de la Villette is a public urban space in Paris, designed by Tschumi. For the purpose of this project la Villette is used as a study to understand his approach to 'disjunction' in an existing public space. These principles are then adapted to work as a method for creating disjunction in an existing route.

I believe the site selected in Woodstock, has the qualities to best express this theoretical discourse. The site functions as a daily route/routine with high pedestrian traffic levels, which is a very good sample on which to exercise and monitor this idea of a gradual change over time. The site as it currently exists is composed of rich layers of history and heritage. It acts as one of few other locations in Cape Town close enough to the city centre where one would not have to enter the CBD to access the greater parts of Cape Town. The site stretches 700 metres from Albert Main road towards the harbour's edge on an existing route. Along the route one encounters a series of interruptions consisting of inclines, declines and breaks brought about by roads, train stations, bus terminals, bridges etc. all connect into a perpendicular spine. This epitomised an appropriate location within which to express a re-vitalised route

The variety of geometries, rituals, layers and specific moments that exist allowed for an interesting analysis of the architectural merit of place. The approach is to not interfere with what already exists, but rather to cut into an already existing movement spine and heightening the architectural experience. By using disjunction and weathering as a set of adapted principles, the project allows users to become manifested within the architectural spaces. A series of pavilions designed specifically to work within their respected locations, along a proposed route clipped on to the existing route, linked through the architectural language of the pavilions. Each houses common functions and additional infrastructure working off one another in a chain, yet still maintaining the opportunity of getting from point to point.

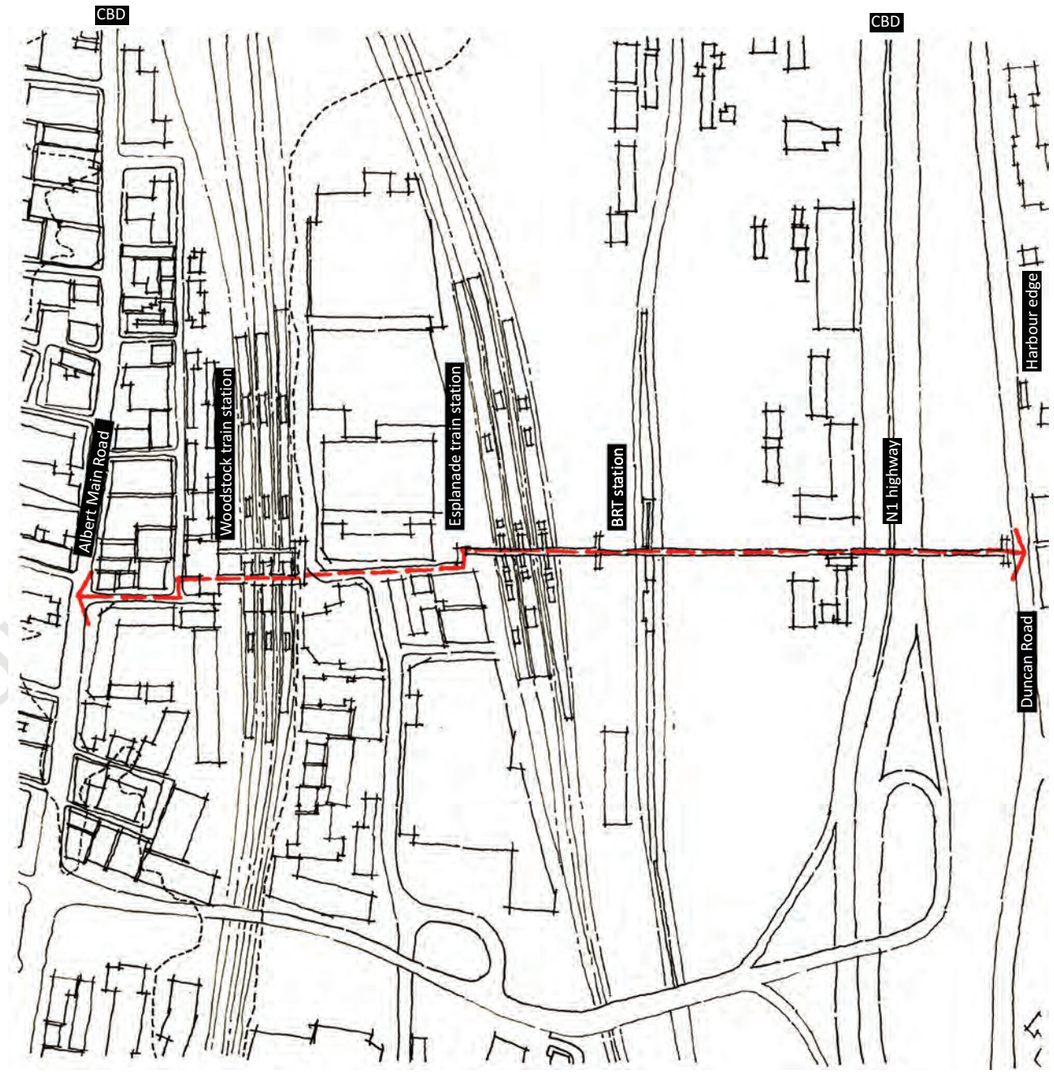


Figure 3: Indicating existing route through the site, located in Woodstock, Cape Town - by author

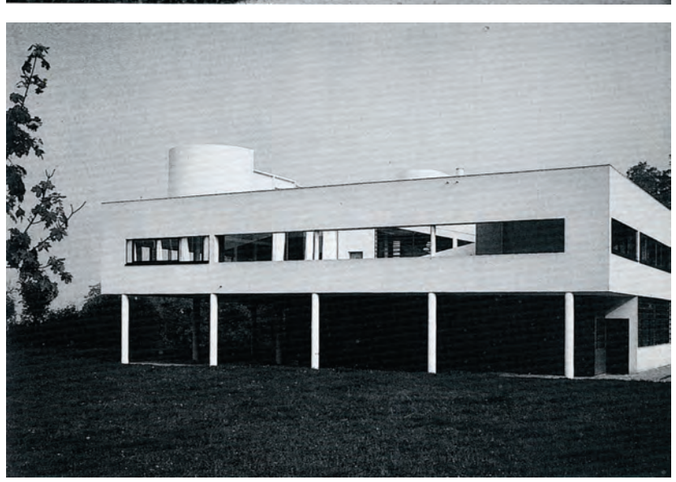
Architecture manifests character through weathering

> *"Buildings are single substantial structures that can be demolished by men or nature or both in time. In architecture, the gradual destruction of buildings by nature in time is weathering".* **Mostafavi and Leatherbarrow (1993: 64)**

The term weathering describes a process whereby the 'environment' creates a reaction on buildings resulting in positive or negative aesthetics. In the context of Woodstock and this project the 'environment' refers to the effects of the social (human) interactions and natural (given) conditions of weathering. Over time the environment acts upon the outer surface of a building in such a way that it's underlying materials are broken down (Mostafavi and Leatherbarrow, 1993: 5). The effect of these conditions, in my opinion, results in a type of aesthetic character as an 'additive' or decay as a 'subtractive'. Mostafavi and Leatherbarrow further explain; while we consider the end of a project being the finish of construction, weathering adds the finish of the environment. The Woodstock 'environment' is made up of a series of conditions where the force of weathering has acted on the spatial hierarchy of the suburb.

Figure 4: representation of weathered building, Maison du Peuple, (Mostafavi and Leatherbarrow 1993, p. 34)

To understand the conditions of 'weathered characters' in Woodstock, a series of exercises were conducted to generate a template of experience. The purpose of these exercises was aimed at understanding how the 'environment' contributes to the aesthetic of the suburb. In relation to the weathered conditions, the findings are used in the project to justify that if the process of weathering is accounted for at the design stage, the character of the building becomes manifested in the architecture of its location. According to Mostafavi and Leatherbarrow (1993: 16), we should revise the sense of the ending of an architectural project, not to see finishing as a final moment but to see the unending deterioration of a finish that results from weathering. Natural and social weathering on surfaces is a process of additive that reveals in its depth newer layers of the same material.



(above) Figure 5: Villa Savoye before restoration, (Mostafavi and Leatherbarrow 1993, p. 8)

(below) Figure 6: Villa Savoye after restoration, (Mostafavi and Leatherbarrow 1993, p. 7)

Natural weathering

Woodstock is known for its extreme weather conditions, the wet winter rains and strong North Western winds, or the extreme summer heat and howling South Easter winds. This semi-dense suburb acts as a wind funnel. From upper Woodstock, strong winds are channelled through the streets, which disperse as they reach the underdeveloped industrial reclaimed land at the harbours edge. Every year in Cape Town and Woodstock these weather conditions contribute to the deterioration of buildings.

The weathered elements of Woodstock, some of natural origin or aged because of neglect, arguably contribute immensely to the aesthetic character of the suburb. However, most of these contributions are the result of predictable but ignored circumstances, and prevalent in most architectural objects. The Cummins Component plant (1966) by Roche Dinkeloo Associates is an example of a building designed with a life span in mind of 800 years. The glass box building with Cor-Ten steel structure uses nature to stain and weather itself positively over time, thus becoming part of a result of the natural environment but still maintaining its original purpose.

Figure 7: The Cummins Component Plant (1966), understanding the relationship between Cor-Ten steel weathered columns, beams and roof. Columns fixed to plinth, note the colour of rust stains on plinth. (KRJDA, n.d.)

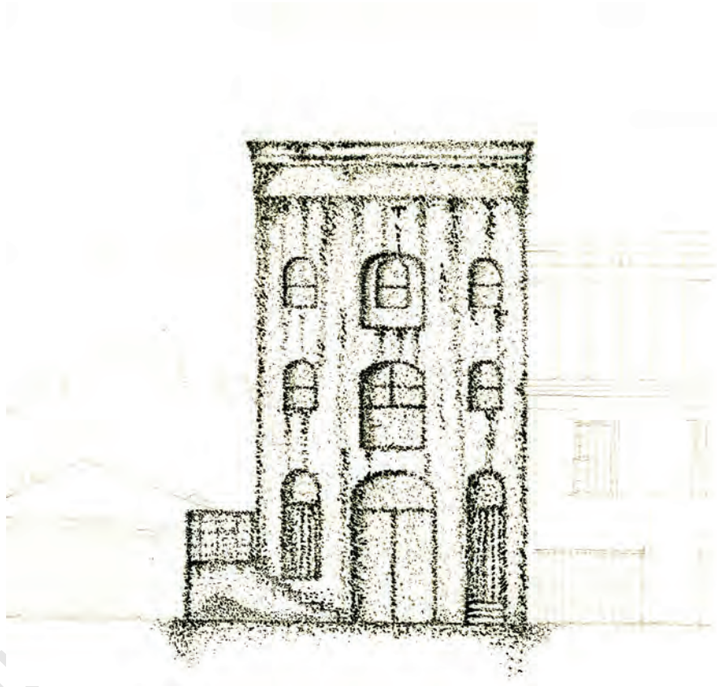


Figure 8: Gawie Fagan Architects offices, Bree Street, Cape Town. 120 year old Cape warehouse type building, one of two remaining, Representation of weathered building as it stands today - by author

Drawing from a contextual response of the weathered elements of Woodstock, the moss covered neglected or aged buildings, un-plastered brick surfaces that are beautifully stained by the rusted roof sheets drip-off or the rusted stagnant trains of the Metrorail engineering yard. These all become design informants of 'what not to do' or 'how to respond', with the potential provisions to make an architectural character manifest through the processes of natural weathering.

Figure 9: Weathered metal roof sheet cladding, caused by runoff. photograph taken from commuters bridge at Woodstock station - by author

Figure 10: Metrorail engineering yard, naturally weathered standing trains - by author

Walking the 700 metre long site, the effects of natural weathering has unveiled a distinct character of the spaces. There are certain repetitive impacts of the environment which have become evident through the study; nature has surely left its mark on these surfaces. *In the mathematics of the environment, weathering is a power of subtraction, a minus, under the sign of which newly finished corners, surfaces and colours are 'taken away' by rain, wind and sun* (Mostafavi and Leatherbarrow, 1993: 6). The effects of the natural environment throughout the site was questioned on numerous occasions, the following was documented:

The uncontrolled flow of rain has resulted in a number of concerns, water runs off surfaces vertically; the vertical surfaces at Woodstock station have not been treated sufficiently to accommodate this effect. The building is constructed mainly of raw concrete and un-plastered walls, white stains mark the walls and staircases. One metre high balustrade acting walls has resulted in large openings between columns and roofs. Cape Town is mainly affected by wind driven rain which makes it more challenging to accommodate sufficient ventilation openings, especially in a public space. A space where the fumes of burning metal on metal caused by trains; natural ventilation becomes a serious concern in a covered space. While standing on the stations platforms, an interesting observation was the concrete base of these platforms. The effects of water runoff , train fumes and the growth of moss has left a dark green colour, a certain type of aesthetic texture to the surface, a texture that almost had me jump off the platform to feel. There are two visible types of metal conditions at the station, the treated and untreated, one completely in its non-disrupted state and the other worn and rusted by corrosion. While exiting Woodstock station at Beach Road, I could not help but turn around to have another glimpse, the dominant concrete mass wall defining the boundary, in its weathered state stained with very specific white water marks. A 360 metre long steel footbridge ahead, 7.5 metre high with stained concrete steps as the only access up and down to the functions clipped on. The entire bridge is exposed to the harsh weather condition, there is no rain, wind or sun protection until one reaches the spaces beyond, with a 1.3 metre high solid metal semi-rusted balustrade providing protection to the bridge. While none of these natural weathered conditions have been accounted for on site, it becomes a concern to question in the design process i.e. is weathering only subtraction, can it not also add and enhance, through its never-ending changes.

(above-left) Figure 11: indicates water stains on concrete - by author

(above-centre) Figure 12: indicates rust stains on surfaces - by author

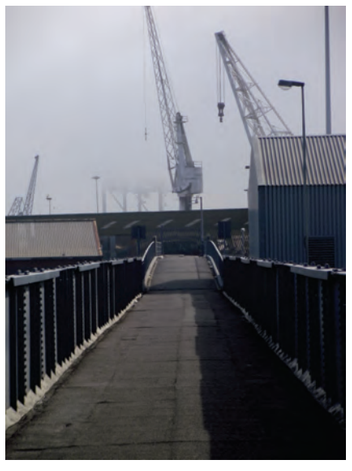
(above-right) Figure 13: indicates moss stains on concrete - by author

(below) Figure 14: shows the effects of water, moss and train fume stains on concrete platforms - by author

(above) Figure 15: shows the failure of joints between materials resulting in run-off creating white satins on vertical surfaces - by author

(above-left) Figure 16: shows the existing station in cladded metal sheets. treated steel to avoid corrosion - by author

(above-right) Figure 17: shows a concrete column base with rusted fixing plate, resulting in rust stains - by author



(below-left) Figure 18: indicates white run-off stains on concrete walls - by author

(below-right) Figure 19: 360 metre footbridge with 1.3 metre high solid steel balustrades - by author

Social weathering

As much as natural weathering contributes to the characteristics of a place, the contributions of human interactions on architecture arguably have the same effect. These effects are visible in buildings internally and externally unless it is accounted for through maintenance, or deliberately left to retard the process in order to add the character of users to the object.

As humans we have expressive personalities; at times we are depressed, sad or happy etc. these are characteristics shown through our bodily language. Materials have similar characteristics; they can express warmth, coolness, roughness, texture etc. that can be understood visually or through physical interaction. In the same way we perceive a material in a space; a material can be an expression of human interaction, which contributes to the character of that space. Adding character to a building through the process of social weathering not only adds visually, but in addition provides a layer for understanding the passage of time and usage. As is the case in the infrastructure of place which is static. However, these conditions of age and character draw from the way in which humans impact them.

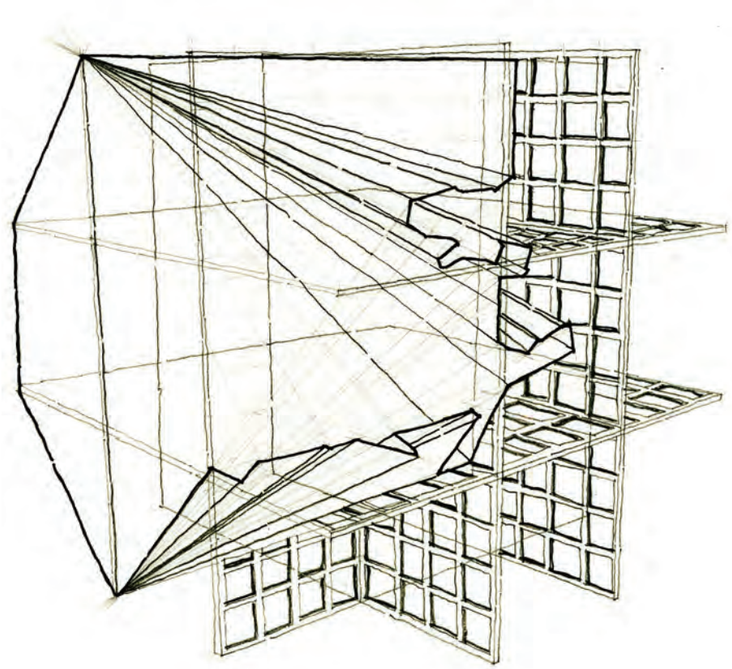


Figure 20: Representation of city grid static infrastructures influenced by the impact of users - by author

The areas of social interactions in Woodstock were analysed under a similar process to natural weathering i.e. through the experience of place. The process looks at how humans indirectly mark a space socially, and how over time those spaces reflect the subtractive or additive weathering of a particular surface etc. According to Pallasmaa (2000: 2), the inevitable process of ageing, weathering and wear are not usually considered as conscious and positive elements in design; the architectural artefact exists in a timeless space, an artificial condition separated from the reality of time. Social weathering acts as a tool to understand the intimacy of humans in spaces and on buildings. Based on the buildings location and functions, social weathering can act as a design informant, to assist in the spatial configuration to accommodate for its effects, furthermore to allow the result to become a manifested character.

On a walkabout through the suburb of Woodstock, my aim was to gain an understanding of how people occupy and use space, furthermore what effects this has on materials etc. Some of the existing materials are of historical significance, such as the stone kerbs, which are no longer installed today. These kerbs at moments of high intensity or frequent use have become worn and smooth, making them slippery and this forces one to acknowledge their existence. Similarly when walking through the streets, stepping in gum, oil, or dirty water, footprints are left on the road surface, over time these marks become part of the character of that location. Further into the investigation, I also visited a newly built building in Woodstock. The building had a low wall along the front facade with aluminium fencing above. The wall was suitably high enough to become a seat, but was not defined as a seat. The aluminium fencing was dented (and some stolen), in such a way that one could understand how it was forced to become a seat, emulating the configuration of a human's arched back. These are a few examples of how through social interaction elements become the characters of the spaces.

At Woodstock's busy train station, I observed how the, majority of the users tended to create their own desired experience of the space. Although the building has been vandilised, it also reveals a socially weathered state through numerous methods. There are two types of platform waiting areas, brick built structures which are part of the old station and steel structures part of the more recent addition, both

providing protection from inclement weather. Further investigation showed that the brick waiting areas are maintained often, however they are still vandalised by commuters with graffiti. Along the back rests of these painted stalls, the repetitive dark stains one can understand are caused by clothing. The steel waiting areas seem more intact and are less likely to be vandalised. Another interesting observation experienced was the way in which people occupy the site, as can be discerned through the textures and the peeling away of some building layers. The main commuter's bridge over Woodstock station which connects platforms also becomes a waiting space for passengers. They stare into the distance awaiting the train arrivals and as train's approach, they quickly move down to the respective platforms. This is easily discerned through the peeling of paint on handrails in the areas where commuters would wait. A similar condition occurs at Esplanade station; here the 360 metre public bridge is the waiting area. As the train approaches, commuters charge down the bridge but are abruptly stopped by ticket control, at times this results in not catching the train on time. It became very evident that the effects of social interaction plays a huge role in the "character" of place. Furthermore it plays a major role in how people occupy and perceive place. These informants become powerful tools in the design process. 'The artistic dimension of a work of art does not lie in the actual physical thing; it exists only in the conscious of the person experiencing it. Thus analysis of a work of art is at its most genuine introspection by the consciousness subjected to it. Its meaning lies not in its forms, but in the images transmitted by the forms and the emotional force that they carry. Form only affects our feelings through what it represents' (Pallasmaa, 1986: 449). Similar observations involve the staining of walls that act as handrails, the wearing of access gates at particular points of pressure or the staining of staircases at desired moments; these are all favourable contributions to the indirect social weathering of the site.

Although some may argue that the process of social weathering is due to vandalism or misuse, in my opinion this process is at the base of what gives a place its character. Through observation this a method where one can gain and understanding of how a space is being occupied by drawing from the desire lines of movement and its direct or indirect interaction.

(above-left) Figure 21: shows newer metal stalls - by author

(above-right) Figure 22: shows old station brick seating stalls - by author

(below-left) Figure 23: elevated platform access bridge, shows commuters awaiting their trains, it also indicates the worn out handrails caused by social weathering - by author

(below-right) Figure 24: shows the worn-out handrails, also note the black stains on walls, as users take the corner they tend to rub their hands on the wall thus leaving a black mark over time. This is an indication that the handrail should have continued from the staircase above - by author

Character + Time

Architecture has a simple yet indirect way of manipulating human perception; it is often through our first reactions to a building, bold, loud, and eye-catching. Similarly to our reactions towards a ruin or a weathered building, such buildings have certain attractive qualities, and tend to play more on the user's emotion of the object. According to McCarter and Pallasmaa (2012: 5) Alvar Aalto stated “it is not what a building looks like on its opening day, but what it is like 30 years later that matters”. This bold statement becomes relevant in the sense that it is important to think of an architecture which can manifest over time, that its character develops by continuous adding layers to a building or a space.

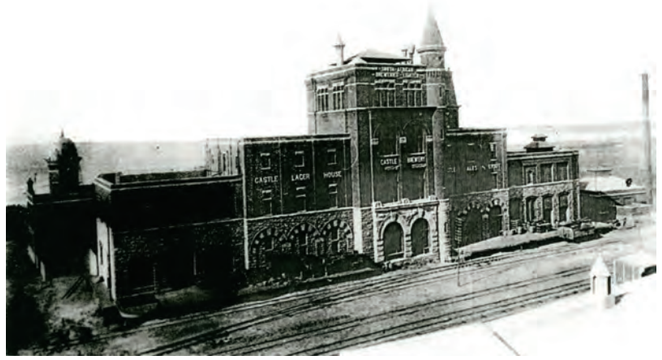
(above) Figure 25: Villa Shodhan, representation of weathered building, (Mostafavi and Leatherbarrow 1993, p. 111)

(below-left) Figure 26: rendering of anticipated weathering of CCTV, Beijing (He, 2009. p.3)

(below-right) Figure 27: rendering of anticipated weathering of Guggenheim museum (He, 2009. p.3)

(left) Figure 28 : Casa del Girasole, representation of natures effect on buildings, (Mostafavi and Leatherbarrow 1993, p. 14)

Building on the theory that architecture provides character, and that such character is based on perception, experience and culture then Woodstock's rich culture provides the required character to build on for this dissertation. Culture is represented by the types of buildings, their age and their function. The numerous historical buildings and spaces which surround the site are the component characters which make up the location. These for example are; (i) Woodstock exchange which is approximately 70 years old; it started as a pharmaceutical warehouse. Recently renovated the building now acts as a series of cultural retail and studio hubs. (ii) The 175 year old St Mary's Church, still standing in its original weathered state, constructed of stone from the nearby quarry on Devils Peak Mountain in 1839. (iii)The 120 year old Castle Brewery's building, which was recently renovated and currently used for office space. These buildings constitute only a few of the historical references to the character of the site. However character can also be a representation of the bodily experience of place through a user's perception, and understanding of the layers which make-up a place as well as the intensity of its use.



(above) Figure 29: Castle Brewery building, Woodstock, Cape Town. (Unknown, 1903)

(centre) Figure 30: Historical photograph of current Woodstock Exchange building. (Heynes Mathew Ltd, 1947)

(below) Figure 31: Historical photograph of St Mary's church, constructed of stone. (unknown, 1938)

(above) Figure 32: Castle Brewery building, Woodstock, Cape Town in current weathered state - by author

(centre) Figure 33: Woodstock Exchange - by author

(below) Figure 34: St Mary's church in current state - by author

Understanding the character of a building or space can be linked to what the space does to the user in experience and memory. How has the space has captured the user's attention and how did the user experience the space. According to McCarter and Pallasmaa (2012: 47) “the degree of slowness is directly proportional to the intensity of memory; the degree of speed is directly proportional to the intensity of forgetting”. We remember something that has captured our attention; furthermore we are forced to remember based on how we move through a space. If one had to follow a daily ritual of movement, this would then provide an opportunity to focus on a different topic because of familiarity of routine. However when changing routine, we are less likely to dwell on our surroundings because we are more focused on the destination.

One of my first attempts at understanding the site was how to log a record of the place. The approach was to visit the site without a camera, by only gathering my first perception and experience in the form of an eidetic recording of the sensuous characters. According to Mori (2002: 63), within the discourse of materiality, how material characteristics are perceived through the human senses is an inevitable subject for research. The mapping of my findings was only carried out hours after my visit. This exercise allowed me to experience the site from a visitor's perspective. I highlighted through a map and series of graphs my movement pattern and first perceptions based on a personal experience of the space. The aim was to understand where the moments of intensity occurred and what clues these provided.

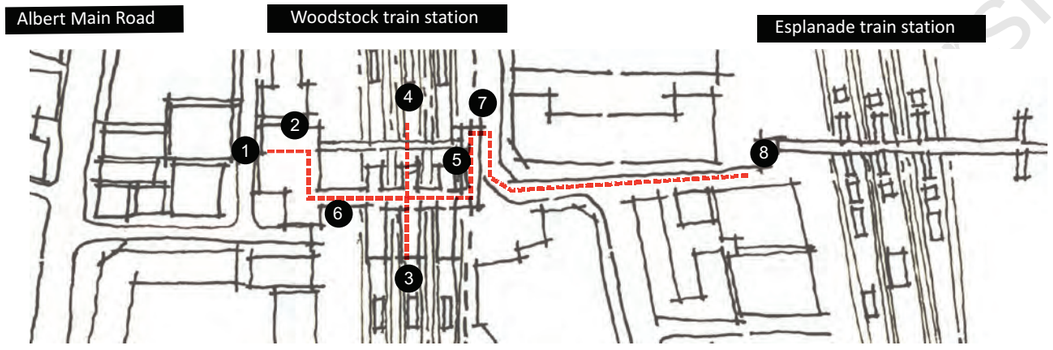
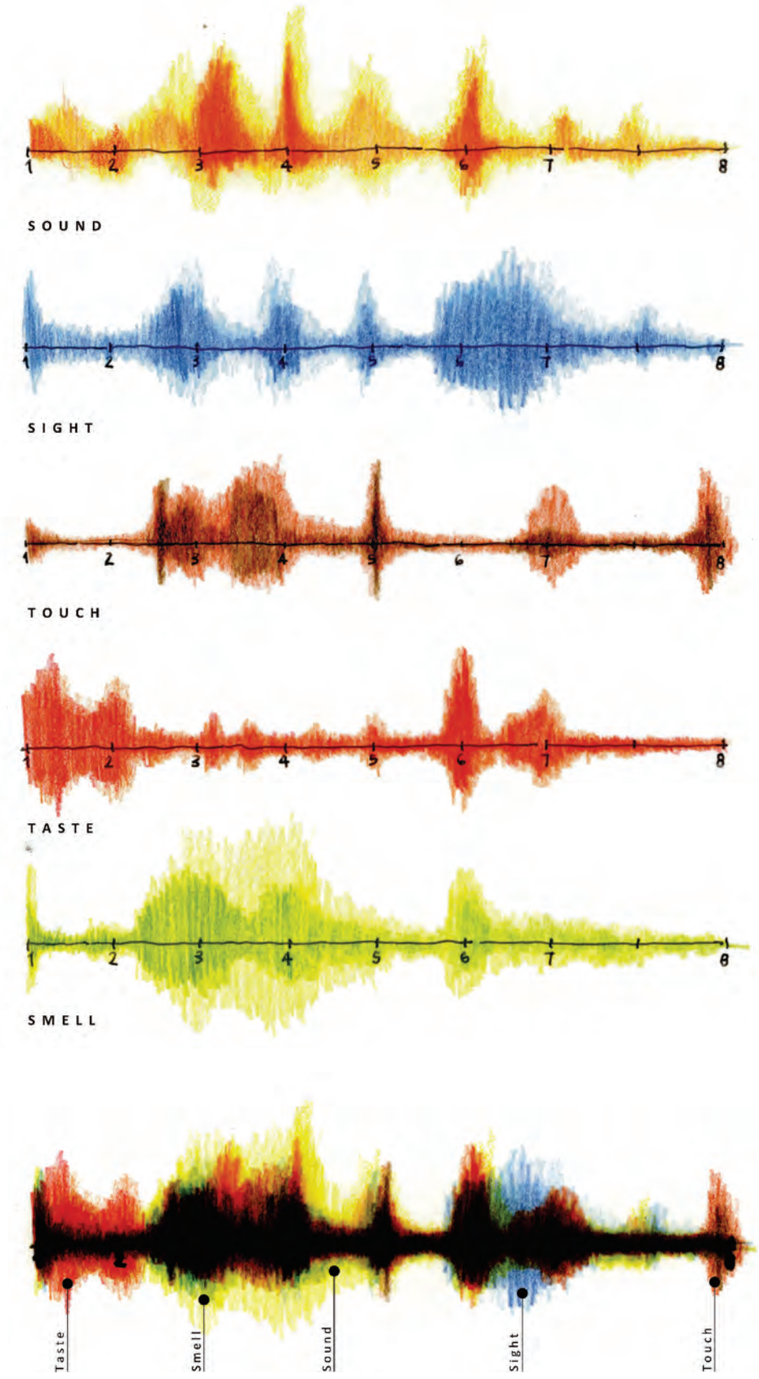


Figure 35: movement map of first visit to Woodstock station, moments of contemplation, understanding space through the senses, materiality and tactility indicated by numbers 1-8, to be read in conjunction with figures 36 and 37 - by author



Both figures 36 and 37 to be read in conjunction with figure 35.

(above) Figure 36: eidetic memory representation (expressed through sensuous, tactility and materiality experiences) of first visit to Woodstock station - by author

(below) Figure 37: eidetic memory representation overlayed version of figure 36 to express moments of intensity at specific spaces - by author

Disjunction in Architecture, Bernard Tschumi

> *"Architecture and its spaces do not change society, but through architecture and the understanding of its effect, we can accelerate processes of change under way".* **Bernard Tschumi (1994: 15)**

The term 'disjunction' in architecture is not specifically seen as a concept, it is a method used by architect and theorist Bernard Tschumi, expressed in his architectural writings and projects. This idea of 'disjunction' has many trajectories, for the purpose of this project only the key ideas were adopted from his work, and used in conjunction with the implementation of the theory at Parc de la Villette. According to Tschumi (1988: 169), disjunction leads to a rejection of synthesis or totality… it is retained between man/object, object/events, and events/space. In simple terms the theory deals with architecture as pushing the limits, each part leads to another; the principles are used to create an off-balanced construction relating to the traces of another. At Parc de la Villette, Tschumi uses a series of concepts built off the premise of disjunction to achieve architecture rejecting synthesis or totality.

Figure 38 : series of 'Follies' with specific programme located at Parc La Vallette along a route. (Flickr, 2008)

The layers at la Villette was an approach to create a series of anchoring or meeting points on a specific point grid system. A series of 'follies' designed at 120 metres apart located on the grid, which was based on the existing activities on site to determine its programmatic function. Introducing a diagram of order in the disorder of reality as Tschumi describes it (1994: 179). The grid system became a strategic tool because it defined a point and activated its potential. Each 'follie' is designed as a 10 x 10 x 10 metre open 'black box' space adapted according to its location (Radcliffe, 2012: 33). Furthermore the purpose behind the grid was that the 'follies' have hierarchy and that none becomes a landmark. The spaces in side are as important are the spaces created around the 'follies'.

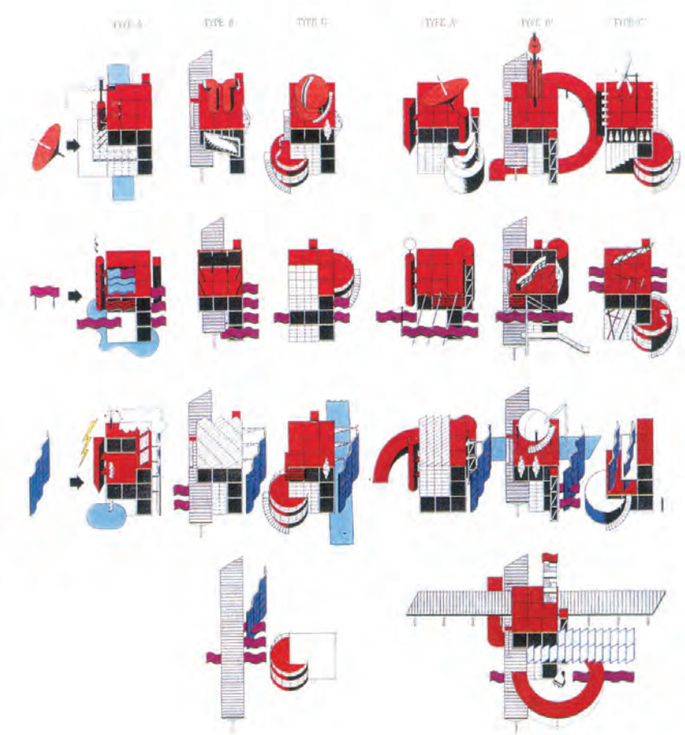


Figure 39 : Follie matrix, diagrams describing 'follies' in relationship to specific locations. (Pinterest, 1982)

The point grid works on the concept of 'superimpositions' or as Tschumi calls it the “system of points”. The system consists of 3 notions, points, lines and surfaces. Points represent the x and y grid system, becoming characteristic references in the landscape. The next layer 'superimposed' is a series of straight and curved line systems acting as protective walkways to either speed up movement between 'follies' or slow down movement to highlight certain reference points such as gardens etc. Lastly the system of surfaces represents the remaining open spaces, the transition floor materials and functions based on the programmatic needs. This abstract system was an approach to create internal logic and infect each other when superimposed. It acts as a common denominator, constituting itself as a system of relations between objects, events and people (Tschumi, 1994: 178). The theme adopted at la Villette takes a series of bright red nodal points, some filled with programme and others completely 'pointless', and uses it to find a relationship with the environment and users.

Based on the case study of la Villette and the 'disjunctive' theory of Tschumi, it becomes an interesting opportunity to apply these notions on a site which is quite the opposite. For example at the Woodstock precinct, the condition along the existing movement spine is an opportunity to design and create disjunction in a hub of fast paced movement, the opportunity for recreational space is through choice or forced upon the user. Similarly the anchoring points of the buildings (pavilions) were designed through a series of investigations trying to understand the moments of intensity or opportunities for 'forceful' interaction.

Figure 40: A ‘Follie’ at Parc La Vallette (Topos, 2012)

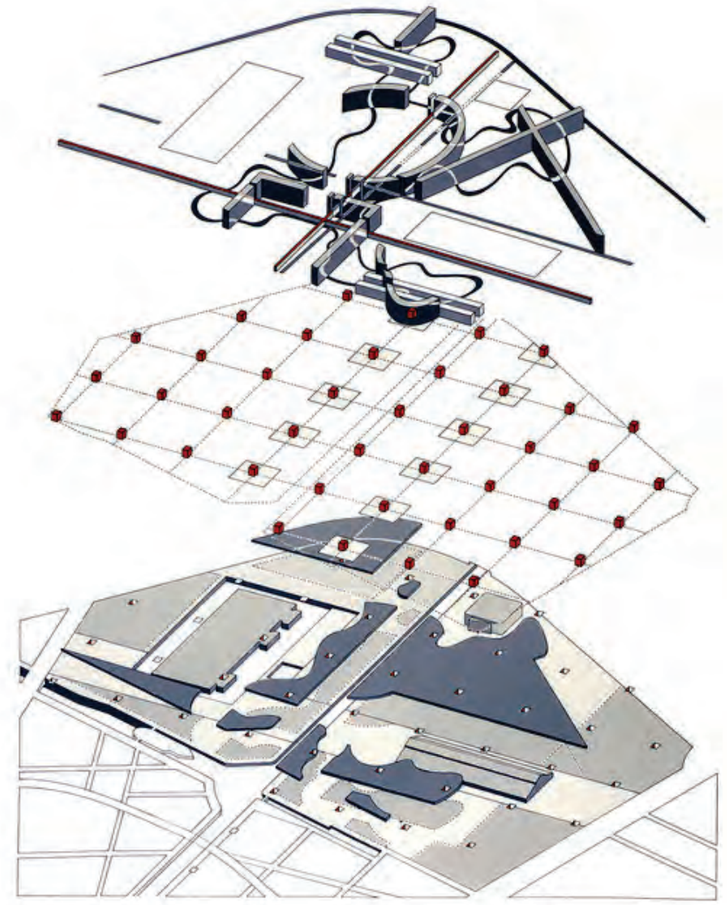


Figure 41: Diagram describing Tschumi’s principles of ‘Superimpositions’. Points, lines and surfaces (Topos, 2012)

"Place resides in the production of architectural and urban space that celebrates the rituals of everyday",
van Rensburg & Da Costa

Historical layers

The suburb of Woodstock enjoyed one of the most popular beachfronts in Cape Town known as Woodstock beach. Back in the seventeenth century, the bay acted as a refreshment station for ships travelling from Europe to the east. According to Radcliffe (2013: 09), the bay later developed into a place of exchange and by 1652 the Dutch East Indian companies (VOC) established a permanent settlement in the bay. The land now became valuable and protection was required from the British and French. The development of the 'Fort Knokke' near the shore of Woodstock was erected in 1744, but demolished in 1952 to make way for the railway line (Radcliffe, 2013: 09).

Figure 42: Woodstock beach and Fort Knokke (Unknown, n.d)

(above) Figure 43: Woodstock beach (Unknown, n.d)

(below) Figure 44: breaking up a shipwreck on woodstock beach front (Unknown, 1878)

An extension or line of defence was erected from 'fort Knokke' towards the Devils Peak mountain by the French, also known as the 'French lines' or 'French Redoubt'. It was built to provide protection to Cape Town from the fear of invasion of the British. It consisted of a series of zig-zag fortifications connected by an embankment and ditch carved in the ground. Its sole purpose was to protect, however it can be understood as a line separating a space that essentially was once connected, and still is the suburb of Woodstock. The 'French Redoubt' separated an area connected by its movement networks parallel to the shoreline. 'Fort Knokke' and the 'French Redoubt' no longer exist as a line of defence but traces of its existence can be seen at Trafalgar Park, Woodstock.

The current site draws from the historical reference of the 'French Redoubt', while the fortification lines separated parallel movement in an area. The 700 metre site with a 360 metre footbridge cuts through a series of parallel private and public transport modes. Albert main road, the train stations at Woodstock and Esplanade, and the BRT bus stop act as nodes (fortifications) along the lines of movement through Woodstock.

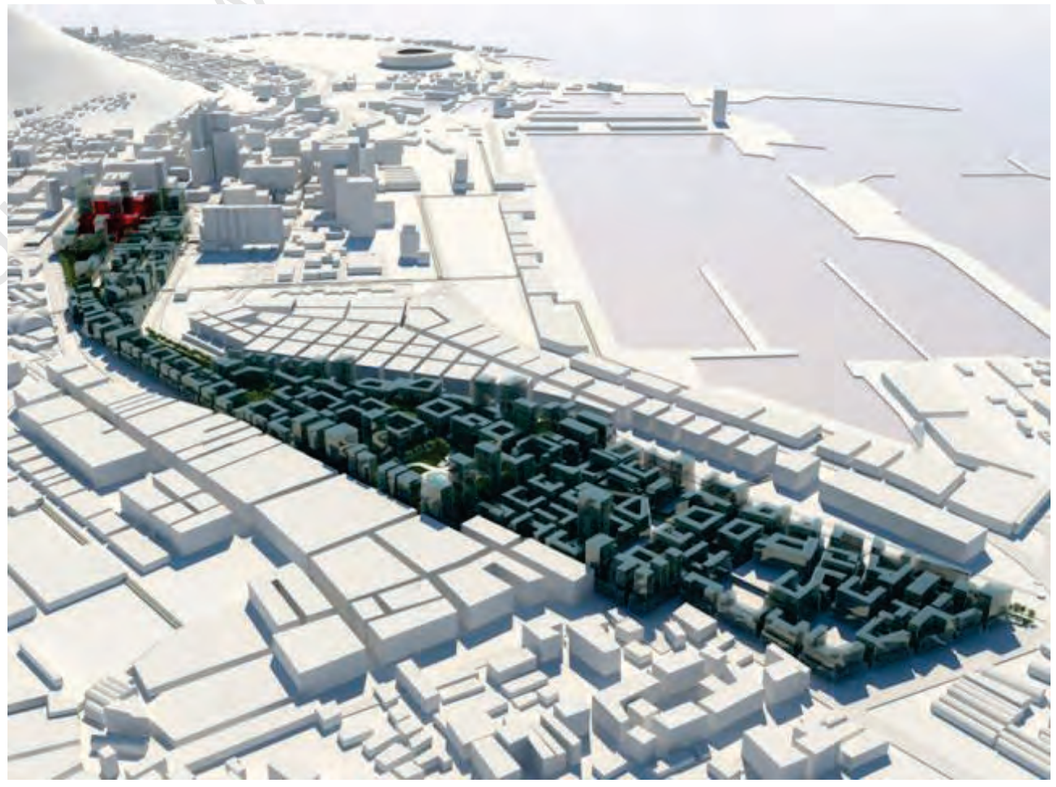
Parts of the angled Fort walls can be seen as a historical reference at the current Golden arrow bus depot. It is interesting to note that the shoreline in 1884 was but metres away from the walls of the fort. However, 120 years later the current shoreline sits as part of the foreshore reclaimed land approximately 350 metres towards the harbours edge, cutting through Culemborg into Woodstock and Salt River. It has been discovered that the land houses approximately 70 shipwrecks buried beneath the water table (Radcliffe, 2012:25). Beach Road and the Castle of Good-Hope which is still in existence becomes a reference for the extension of these shorelines.

(above) Figure 45 and 46: remaining reference to 'French Redoudt' at Trafalgar Park, Woodstock - by Author

(below) Figure 47 and 48: Golden Arrow bus depot, reference of remaining parts of 'French Redoubt'. (McCaughey, 2013)

The industrial wasteland on the extended reclaimed shores of Woodstock forms part of the site, located beneath the 360 metre footbridge. However, this valuable land extended from the city will soon become a strip of developed prime properties located on the ocean's edge; this can be seen in Makeka's 2030 vision for the City of Cape Town. The reclaimed land carved out of the pre-existing shorelines, has high phosphorus and diesel polluted water table. The water table is located 5 metres below the current ground level, thus making the land unstable for development unless seriously considered.

Figure 49: Makeka's 2030 vision for City of Cape Town and railway system. Proposal bleeds from city onto Woodstock's reclaimed land with a proposal to sink the railway system underground. (Makeka Design Lab, 2010)



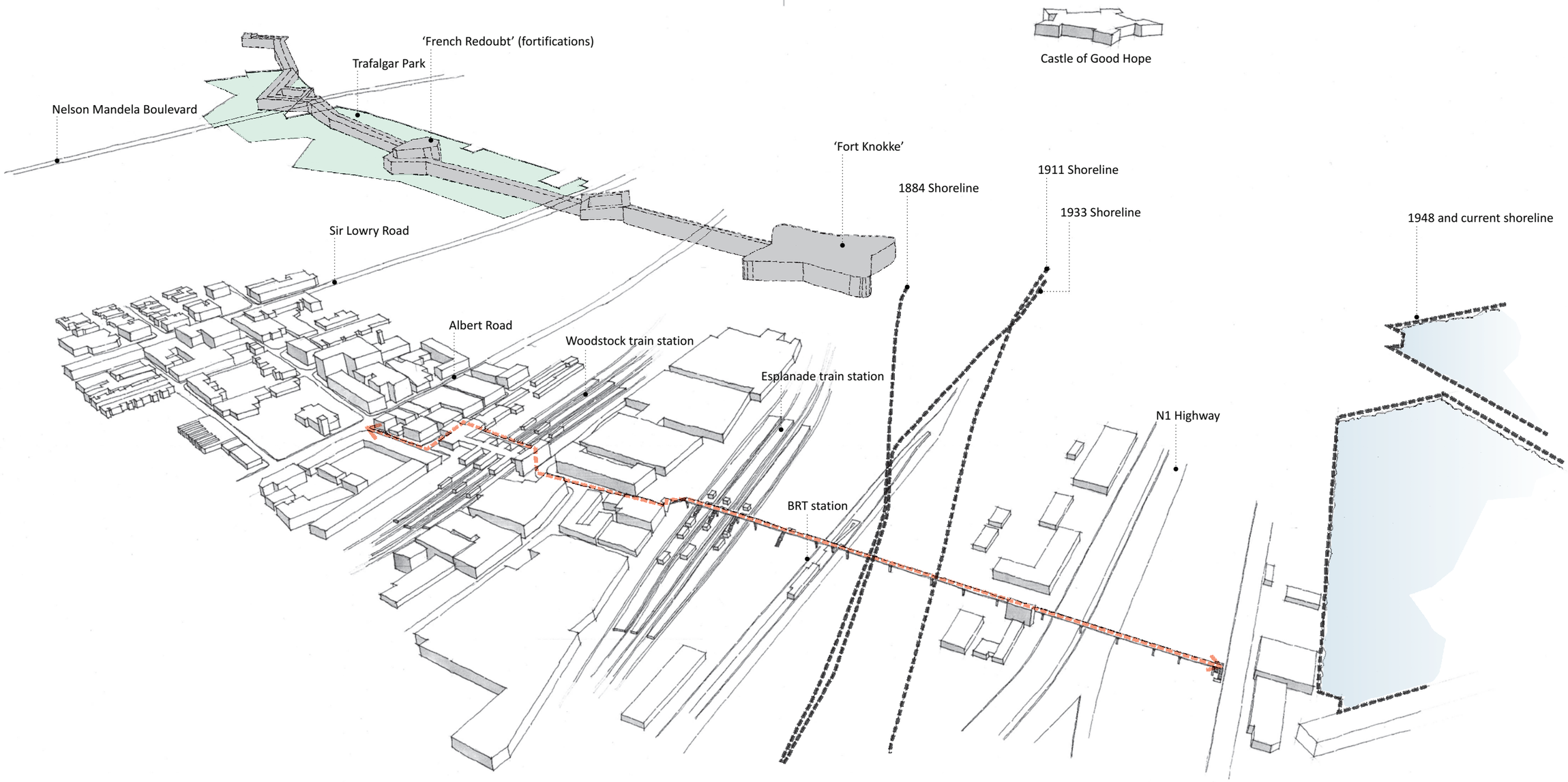
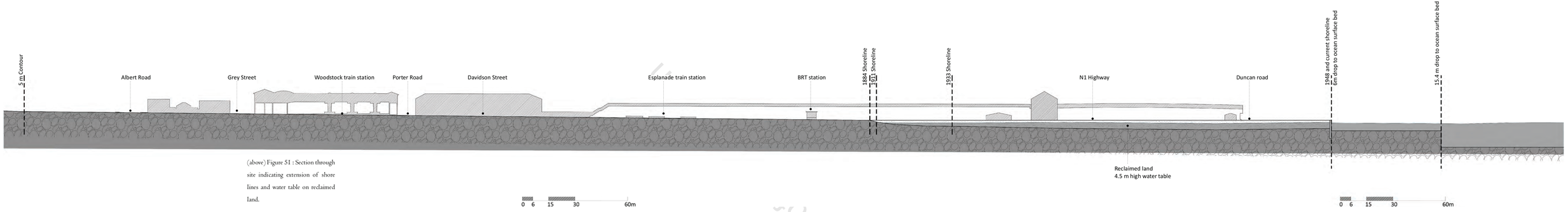
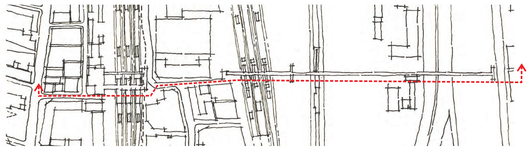


Figure 50 : Map indicating historical references in Woodstock to site.



(above) Figure 51 : Section through site indicating extension of shore lines and water table on reclaimed land.

(below) Figure 52: indicating section line



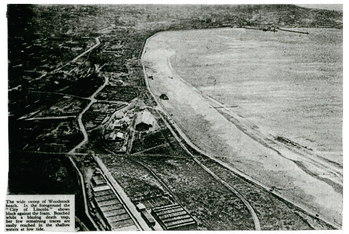


Figure 53 : aerial view of Woodstock shore line (unknown, 1933)

Figure 54 : aerial view of Woodstock suburb with mountains in the background (unknown, 1934)

Figure 55 : Woodstock beach and Beach Road (unknown, 1936)

Understanding route: A river of movement

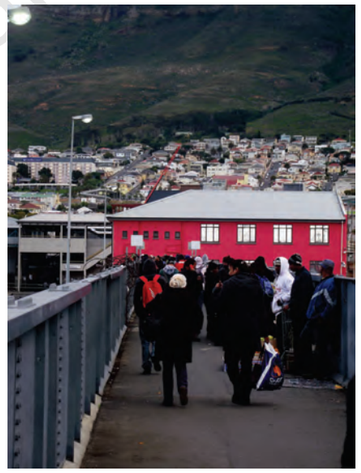
The 700m long site cuts through a series of transport modalities, all running parallel to each other. The existing movement spine sits perpendicular to these 'transport modalities'. Pedestrians move from Albert Main road, through Woodstock station. The split occurs at Woodstock station, as a commuter or as a continued journey through the remaining parts of the site. Based on analysis a back and forth flow of people occurs in large numbers from Albert Main Road to the harbours edge. The majority of the movement occurs between Woodstock station and Esplanade Station, where commuters switch between train lines especially at peak times. Connecting between the two stations involves a decline and incline of 7.5 metres to access the 360 metre footbridge. Access to and from the harbours edge is only possible via the 360 metre continuous footbridge. The strength of the site connects along a spine linked through buildings, over systems and between spaces.

(left) Figure 56 : Grey Street during peak time - by author

(right) Figure 57: Commuters bridge at Woodstock station at peak time - by author

(above-left) Figure 58 : commuters on Woodstock station platform at peak time - by author

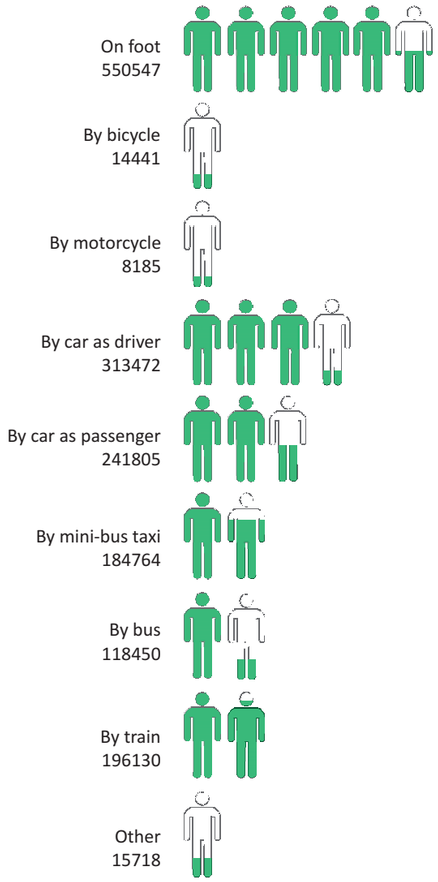
(above-right) Figure 59: commuters moving between Woodstock and Esplanade stations at peak time - by author



(below-left) Figure 60 : commuters on 360 metre footbridge moving towards train stations at peak time - by author

(below-right) Figure 61: commuters walking from harbour's edge at Duncan road towards train stations during peak time - by author

Cape Town - Modes of transport (100 000's)



Cape Town - Modes of transport to work (10%'s)

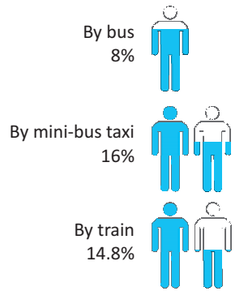
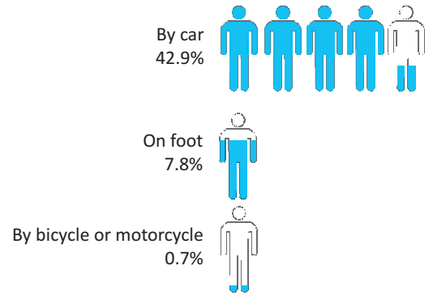


Figure 62 : Cape Town modes of transport (StatsSA, 2001)

Figure 63: Cape Town modes of transport to work (City of Cape Town, 2011)



Statistics at Woodstock site (50's)

Information recorded in 10 minute increments at peak (06:00 am to 09:00 am and 16:00 pm to 18:00 pm) and off-peak (10:00 am to 15:00 pm).

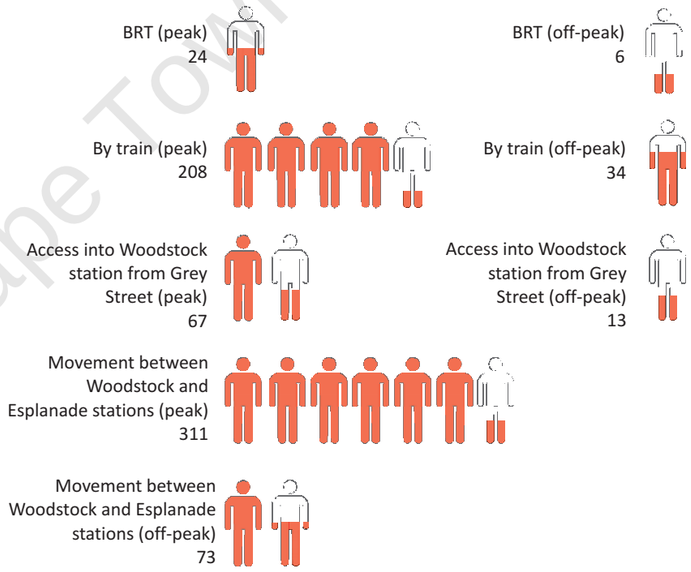


Figure 64 : Statistics at Woodstock site - by author

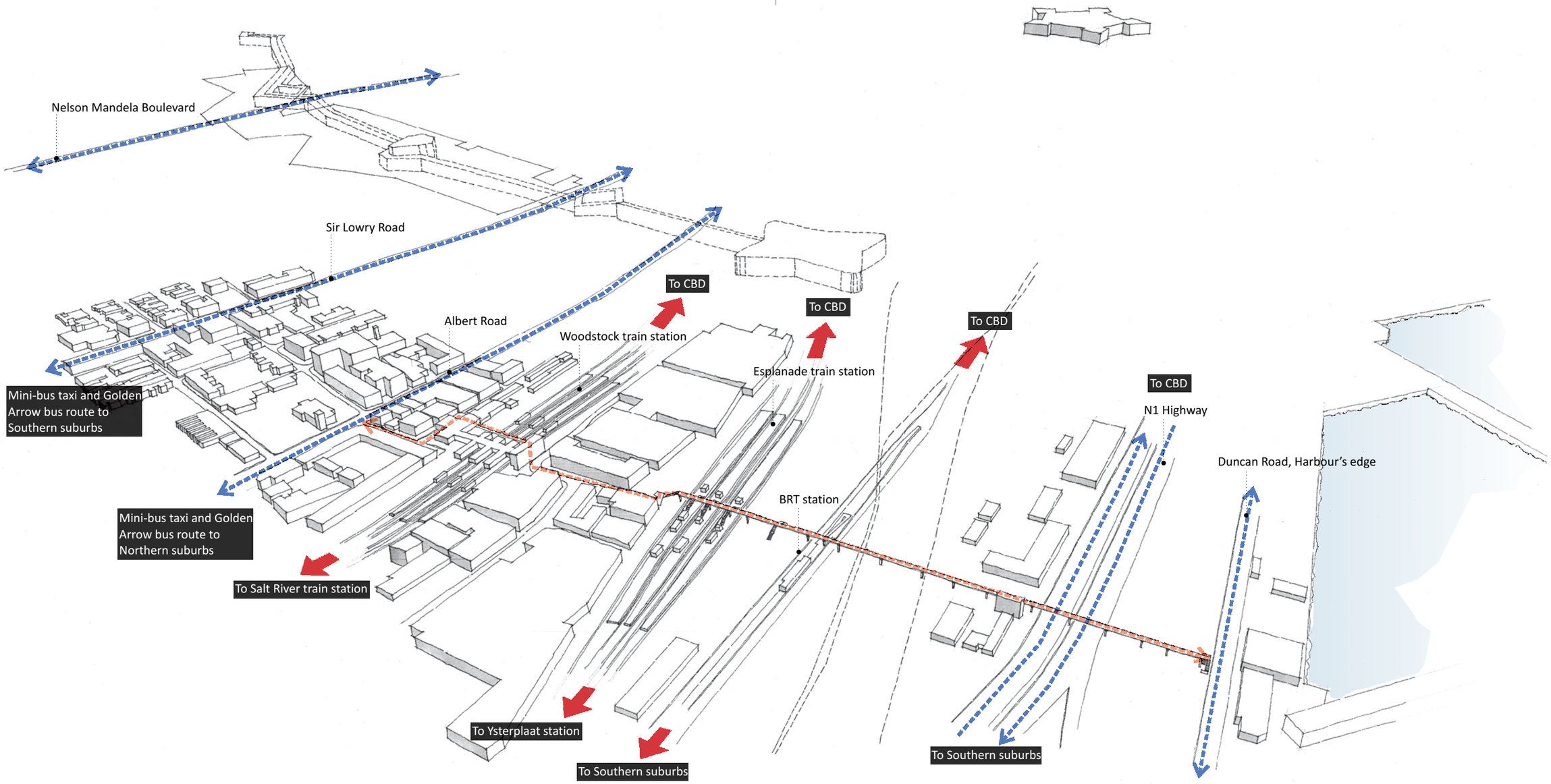
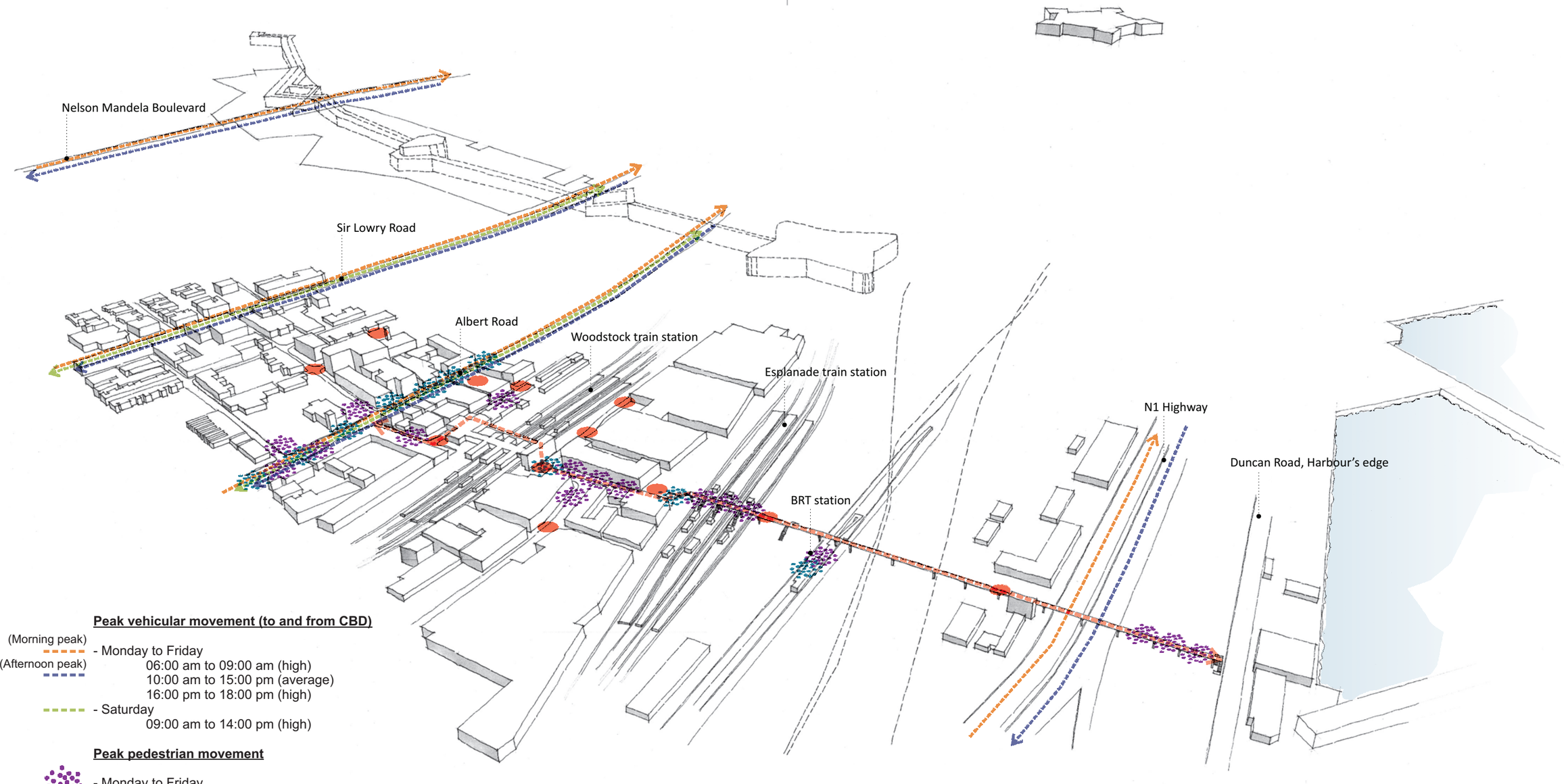


Figure 65 : Map indicating layers of private and public transport through site.



Peak vehicular movement (to and from CBD)

(Morning peak)
(Afternoon peak)
- Monday to Friday
  06:00 am to 09:00 am (high)
  10:00 am to 15:00 pm (average)
  16:00 pm to 18:00 pm (high)
- Saturday
  09:00 am to 14:00 pm (high)

Peak pedestrian movement

- Monday to Friday
  06:00 am to 09:00 am (high)
  10:00 am to 15:00 pm (average)
  16:00 pm to 18:00 pm (high)
- Saturday
  09:00 am to 14:00 pm (high)

Crime hot spots

Figure 66 : Map indicating layers of movement vehicular and pedestrian. Map also indicates crime hot spots

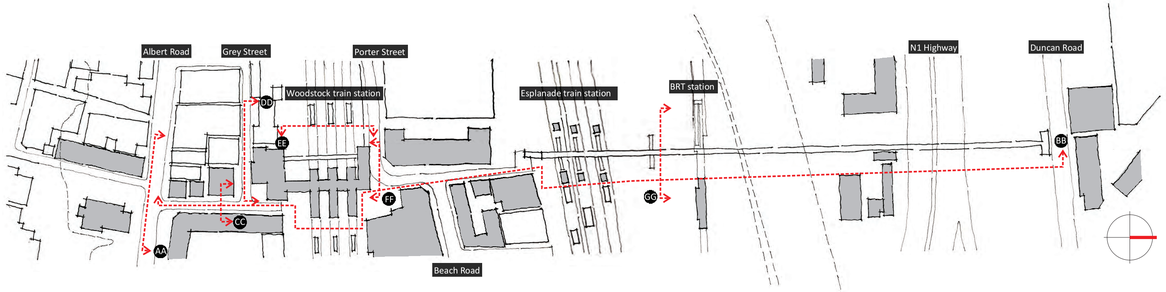


Figure 67 : Map indicating Section lines

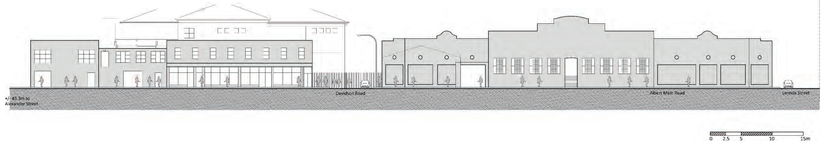


Figure 68 : Section A-A

Figure 69 : Section B-B

Figure 70 : Section D-D

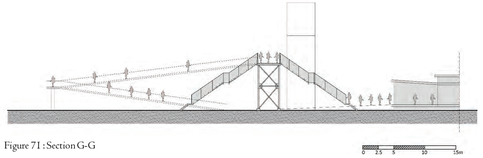


Figure 71 : Section G-G

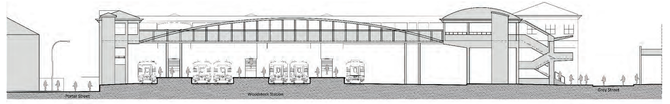


Figure 72 : Section E-E

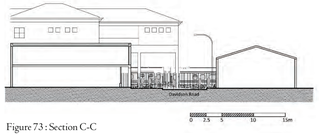
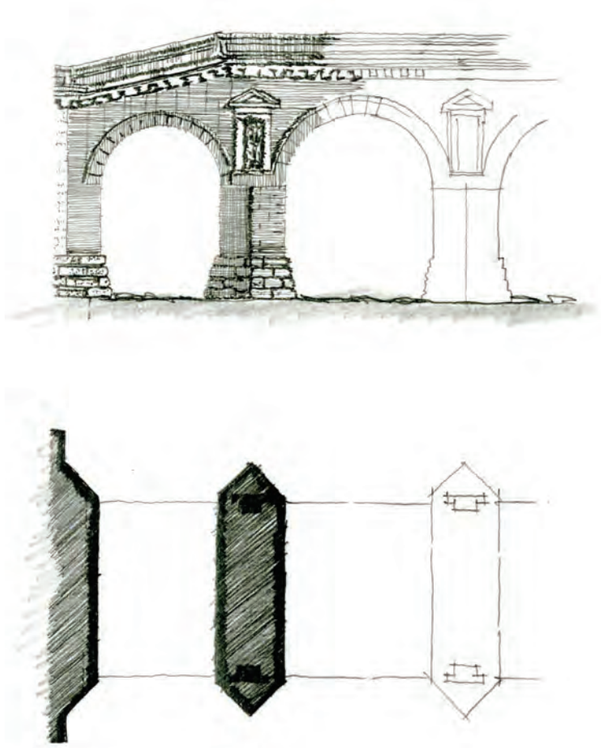


Figure 73 : Section C-C

Figure 74 : Section F-F

The flow of people through the site, can metaphorically be linked to the way water flows down a river beneath a bridge. The bridge or pier crossing a river is kept up by columns also known as 'cutwaters' or 'breakwaters'. The purpose of these 'cutwaters' is to act against the water pressure and reduce strain on the bridge, to allow water flow to past smoothly. The constant movement and interaction of water against these 'cutwaters' result in a change of its aesthetic, where one can understand the water levels, flow, and weathered moments, thereby telling a story of time.

Figure 75, 76 and 77: Drawings describing 'cutwaters' beneath a bridge



Along the 360 metre footbridge starting at Davidson Street and ending at the harbours edge, the bridge houses the access to Esplanade station, the Northern suburbs BTR station, the Metrorail engineering yard, crossing over a large the N1 national highway and controlled access to the harbour at Duncan road. All of these transport networks link to the CBD. The split line located 400 meters from Esplanade (northern suburb line) and Woodstock (southern suburb line) stations, feeds off the CBD main station. Esplanade station also houses the national, international and freight lines fed by Cape Town Main Station.

Figure 78: Article regarding the level of crime at Woodstock train station. (People's Post, 2013:1)

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People's Post
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WOODSTOCK: CRIME AND DIRT FLOURISH

Problems dock at station

TAURIQ HASSEN

ROBBERIES and dirt are two of the main problems aggravating commuters daily at Woodstock station.

Rubbish strewn across the entrances, a lack of effective security guards as well as the number of gaping holes in the fencing sum up the problems for commuters.

Woodstock resident Salmaan Richards has been travelling to his workplace in Parow by train for the last eight years.

He has endured seven robberies, witnessed a number of people jumping the train and escaping through the holes as well as dodging piles of rubbish at the station.

"It really is getting worse. It's just not safe anymore. The station, along with the surrounding areas, is a complete eyesore. We don't have to put up with this type of service and I would rather risk my life using the taxi," he says.

Richards explains that "incompetent" security guards were of no help during all seven of his robberies and he only chooses to use the train as it was a cost effective means of transport.

He called for plenty more trained security staff at the station and says: "Metrorail must pull up their socks if they do not wish to lose business".

Richards has also seen the holes in the fencing used by commuters to avoid paying for their trip, as they choose to jump off the train and escape through the holes.

"For some people, the train is their only form of transport to get to work and back. Metrorail and the poor service they provide must be exposed; Woodstock station should be the perfect platform to witness the problems commuters are faced with," he says.

Amanda Brinkhuis, another annoyed commuter and Woodstock resident, claims to have reported problems about the dirt and "incompetent" security guards to Metrorail before, but has seen or heard nothing stemming from her complaints.

Brinkhuis was robbed in February right outside Woodstock station, but believes she was targeted the instant she disembarked.

"As the train approached the platform, I saw these two men sitting against one of the buildings metres from a security guard. The minute I was outside the station, they robbed me," she says.

The suspects snatched her bag containing a laptop, took a cellphone from her pocket as well as a train ticket and wallet.

"I ran back in to the station for help and all the security guard could tell me was that I must go to the police station and open a case. This is while I could still see these guys running down the road with my things," she says.

People's Post visited the Woodstock station and mounds of dirt in blue refuse bags were littered about the entrance. There were also a few holes in the fencing.

However, security guards were seen about the station.

BEWARE: Criminals lurk about the entrance at Woodstock station, locals say. PHOTO: TAURIQ HASSEN

Chairperson for the Woodstock Community Outreach Forum, Shamiel Abbass, plans to take the matter further after receiving similar complaints from residents within the Woodstock community.

He explains that a number of anti-social activities are unfolding in the surrounding streets and a few muggings have already been witnessed on the footbridge leading to the platform. "This is of major concern to the forum and we must take the matter further with all the security role players in this area," he says.

The forum plans to address the problem with local police and Metrorail.

He hopes to discuss a plan on how to improve the security around the station and make travelling safer for commuters.

Abbass adds that the biggest problem arising from this issue is the lack of visible security around the station.

He also feels that businesses in the area, including Metrorail, should pull up their socks in helping to make Woodstock safer.

"I have received complaints from the community and I feel that we cannot only look at what unfolds within the community, but we must take note of the businesses as well. Woodstock station falls under this category and it must be dealt with," he says.

Regional manager for Metrorail, Mthuthuzeli Swartz, confirms that Metrorail Protection Services is aware of the security issues such as theft and robberies around the Woodstock Station.

The matter had been raised in a joint planning meeting between the protection services and the Railway Police.

Swartz explains that daily inspections are conducted by security supervisors.

"We encourage anyone with any information to come forward so we can get these people behind bars," he says.

He maintains that security staff deployed at the station would do "everything in their collective power" to bring the criminals to book. "We investigate all claims and will not hesitate to institute corrective measures. We continue to direct our collective efforts to eradicate crime from rail precincts," Swartz says.

A reward of up to R25 000 is payable for information leading to conviction.

Anyone with information regarding any incidents can phone the all-hours security line on 0800 210 081.

1 Albert main road is one of the busiest roads in Woodstock, at condition 1 there are numerous types of light industrial and cultural hubs such as the Woodstock exchange, a series of studio spaces and retail facilities. One of the oldest churches St Mary's stands perpendicular to the station. The noisy main road has many little boutique stores, spaza shops and manufacturing yards such as Baltic Timbers which is located on the corner of Albert and Davidson Roads. Access to public transport is possible through a series of public transport options linked to the station such as mini-bus taxis, private taxis, Golden arrow busses etc.

2 Main access to Woodstock station, and only route over to footbridge. The building is not disabled friendly and users have to climb 7.5m of steps to access the station. The entrance acts as a meeting point or node in Grey Street, people filter from main road through the secondary streets and link up at the station entrance. This access point links other modes of public transport located beyond Woodstock station in the direction of the harbour. Majority of the 7+ metre buildings facing the station entrance are light industrial workshops and manufacturing yards.

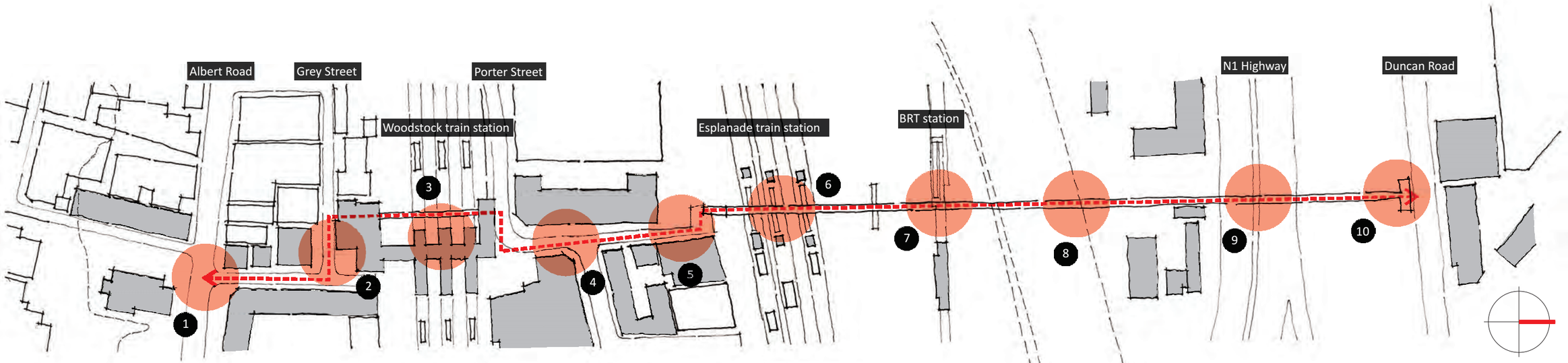


Figure 79: Map describing conditions along existing route

3 This space is used for commuters or those passing through the station to access Woodstock or other areas beyond such as the harbour. Here commuters wait on the footbridge for the trains to arrive before speeding down the staircases. There is no disabled person's access to the platforms. For passing through travellers, they have to climb up to climb down the other side.

4 This is one of the busiest pedestrian parts of the site; hundreds of people commute between stations, between destinations. It is a flat road link with 7.5m high staircases on either side. People filter through the street passing informal traders between masses of buildings.

5 This point acts as the link to the 360m existing footbridge which crosses over numerous transport modes linked back to the harbour's edge. From experience, it is also quite a dangerous part of the site.

6 Commuters wait for their trains, before rushing down the staircases only to be confronted by a ticket control office, thus causing a build-up of people and in some cases miss catching their trains. There are 3 platforms at Esplanade station all only accessible from the bridge, with no secondary link that exists between platforms. The train station is not disabled friendly. With a 3m wide bridge, commuters waiting for trains and informal traders set up on the side there is no space for connecting commuters to pass through the bridge without causing a build-up of people.

7 There is a ramp linking the bridge to the BRT station which travels to the city centre and northern suburbs. It becomes a link for cyclist to access the bicycle lane into the CBD or northern suburbs. The BRT station is disabled friendly however it is impossible for wheelchairs to exit the footbridge once above.

8 Open piece of land, access is controlled by security. It is under-used reclaimed industrial wasteland. The land was once part of historical shorelines which can be seen in the drawing indicating the extension of shorelines. Further along the bridge people who work at the industrial buildings parallel to the highway access the bridge by climbing up the footbridge structural columns, there is no other alternative.

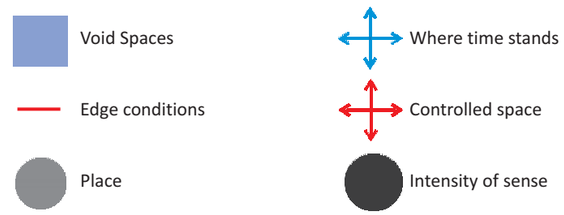
9 This part of the footbridge crosses over the N1 highway which links to the CBD and southern suburbs. At this location the project ends in my analysis of the site; access to the harbour edge is controlled.

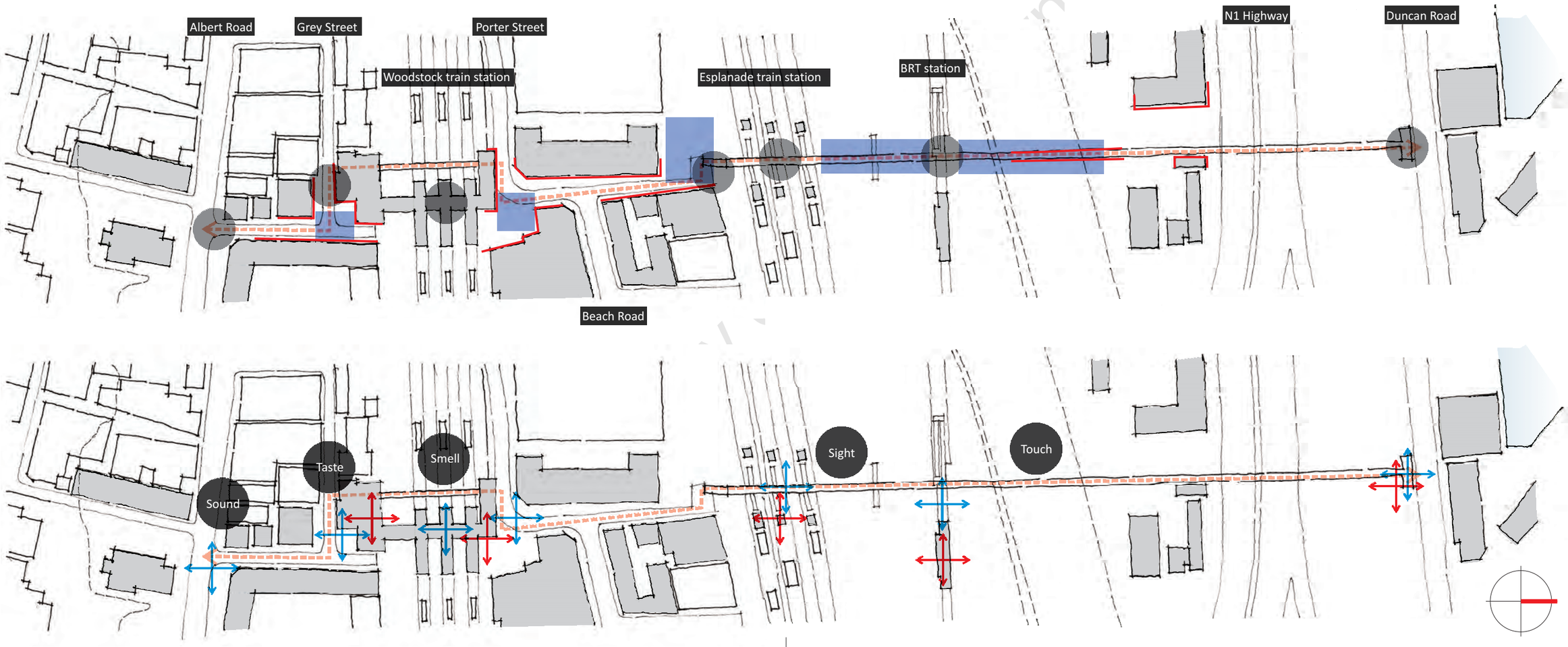
10 The link to the harbour edge exists at this point, however it is controlled by security. It is the only pedestrian access point into the harbour area. Those who work at the harbour walk across the bridge to access the numerous modes of public transport options. It is quite a deserted part of the bridge, and could potentially pose a risk of danger.

Finding intensity: locating opportunity

Based on the analysis of the site conditions, the location for intervention looks at points on site where opportunity of intensity exist. These were conducted through a series of analysis understanding the opportunity layers of the site. Furthermore, by using the theory of Tschumi's superimpositions the location of pavilions feed off the existing route of movement. However, the intervention tackles an opportunity to provide a new route off the existing one, to encourage and heighten the experience through disjunction and weathering. The locations of the proposal deal with intensity of movement, people, materials, and creating repetitive nodal points in the landscape.

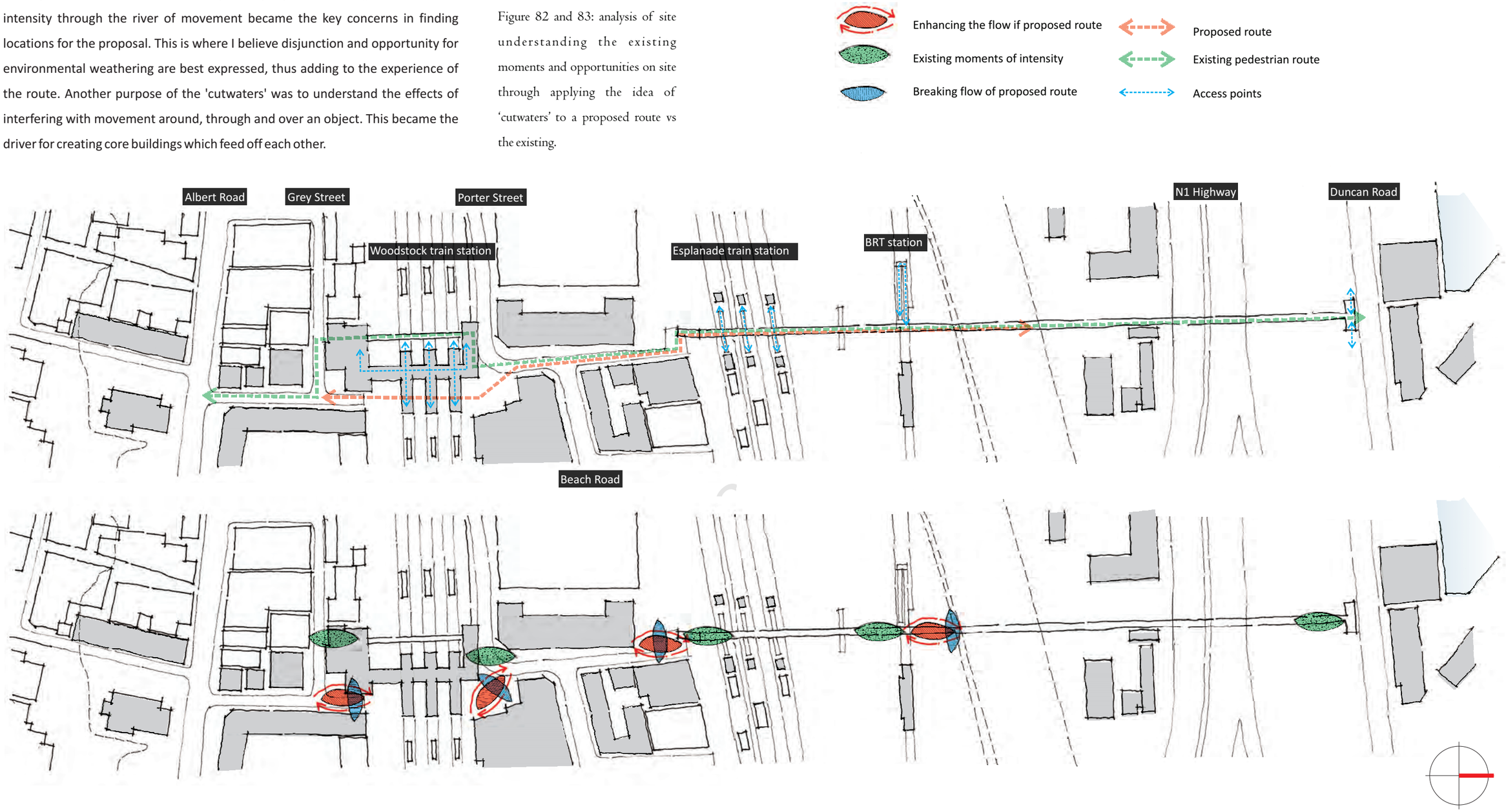
Figure 80 and 81: analysis of site understanding the existing moments and opportunities along site





As an additional exercise a series of 'cutwaters' is applied to the movement spine, to understand how it could possibly break the existing movement flow, and what the implications this would be. The impact of people on buildings at moments of intensity through the river of movement became the key concerns in finding locations for the proposal. This is where I believe disjunction and opportunity for environmental weathering are best expressed, thus adding to the experience of the route. Another purpose of the 'cutwaters' was to understand the effects of interfering with movement around, through and over an object. This became the driver for creating core buildings which feed off each other.

Figure 82 and 83: analysis of site understanding the existing moments and opportunities on site through applying the idea of 'cutwaters' to a proposed route vs the existing.



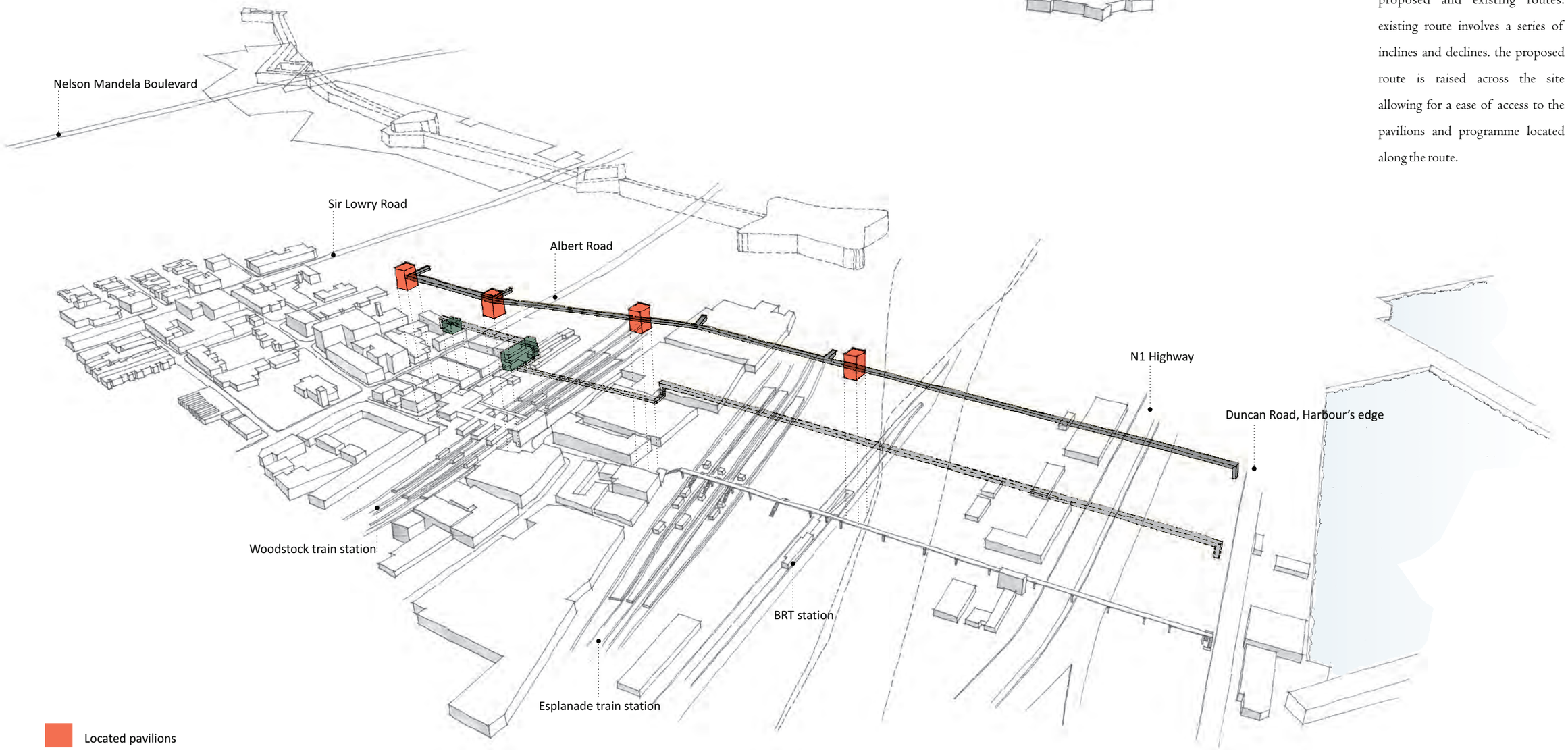


Figure 84: Relationship between the proposed and existing routes. existing route involves a series of inclines and declines. the proposed route is raised across the site allowing for a ease of access to the pavilions and programme located along the route.

Route dislocation: the watched towers

"To be permanent is contrary to existence. Things are forever changing" **Enric Miralles**

The approach to the site is to create a series of pavilions which become regular markers in the landscape, which at the same time act as disjunctions along a route of movement. Each building cuts into the proposed movement spine and which in turn, clips onto an existing movement route. Furthermore, heightening the experience of the user by using the notions of disjunction and weathering. The approach to the route is derived from two notions, the principles of Tschumi's superimpositions, and referenced to the 'French redoubt' which separated an existing space with a series of fortifications.

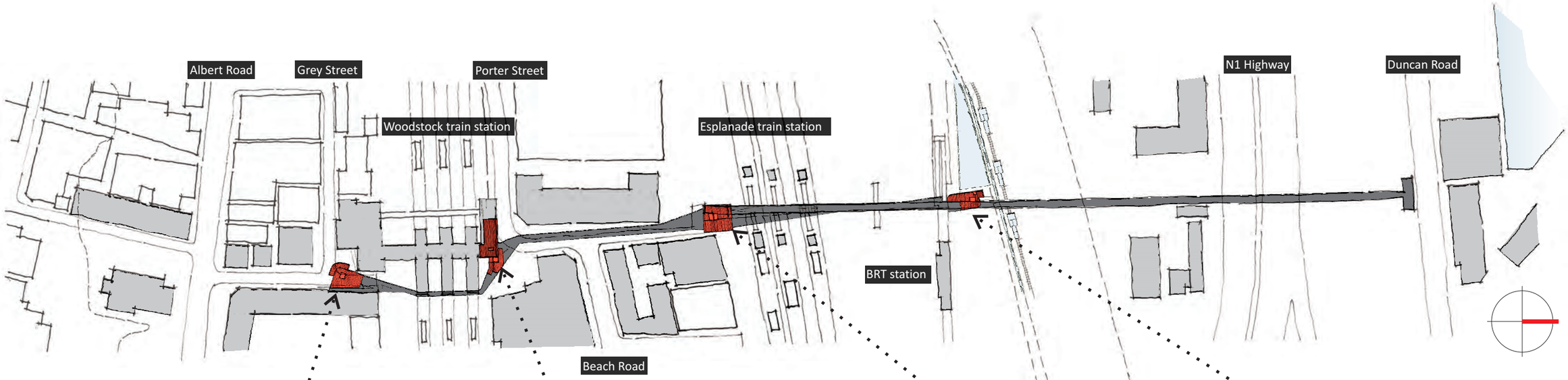
For the purpose of this project, Tschumi's principle of superimposition was firstly based on, 'anchoring points' which refer to the moments of intensity and location. Secondly 'lines' which use the existing route of movement and aim to provide a route between 'points'. Lastly 'surfaces', refer to the weathered elements which "naturally" and "socially" provides the buildings with character over time. 'Superimpositions' combined with the theory of disjunction become the key in movement and create opportunities for change along the route, e.g. slip routes, a moments of change in direction etc. At the same time the notion of weathering creates a change in surface colour, texture etc. these together make-up the desired disjunction of the route.

The regular markers in the landscape are all designed to work with the route and its location. The idea of the 'cutwaters' applied in each pavilion acts as a service core which houses circulation and services, the cores are permeable to movement and function. Each building houses common functions such as toilets, a security box which overlooks the route, informal trade and store, disabled access, water storage system and viewing platforms. As an added function to work with the location and provide infrastructure, certain buildings house specific functions such as a signal tower which controls train line change, electrical sub-station, internet café, water purification systems etc.

The influence of programme on each unit is derived from its location; it focuses on the access points along the site, programme which feed off a pavilion and the route at a raised level. The reason for specific public function versus commuter function is directly related to the opportunity of wanting to create a disjunction in the buildings circulation and in the proposed route. Functions that become more public specific are located closer to ground level thus allowing an opportunity for security to shut down the access points into semi-public spaces. Programme feeding the street versus the security points are designed to create an ease of access but still allowing security points to overlook the street, bridge and pavilions along the raised bridge.

The project concludes at the industrial wasteland located at pavilion 4 using a water treatments process to prepare the high water table land for future development. A 20 to 30 year programme aimed at compacting and removing contaminated water on the reclaimed land, but at the same time cleaning the ground water to feed the entire project with clean water. A movable 'treatment train' process cleans water ridding it of solids, diesel and phosphorus. Water is then pumped to each building where it undergoes a UV cleaning process making it drinkable.

The overall intention of the pavilions and proposed route is aimed at allowing an opportunity to filter through the series of existing modalities at a constant level, and that the architecture and configuration of the route creates moments of contemplation, access and function to feed the pavilions location. Furthermore, the pavilions still become anchoring points to filter down and out onto the street. Each security box is designed to overlook each other resulting in a route under constant surveillance, the result of this means that each pavilion will be monitored by the watched towers.



Pavilion 1

Informal trade and store area
Toilets
Lift core
Access to Woodstock train station
Link to tower 2 along proposed bridge
Security point overlooking bridge and street
Viewing platforms
Internet cafe
Water purification tank
Water storage tanks

Pavilion 2

Informal trade and store area
Toilets
Lift core
Link to tower 3 along proposed bridge
Access to Woodstock train station
Security point overlooking bridge and street
Viewing platforms
Water purification tank
Water storage tanks

Pavilion 3

Informal trade and store area
Toilets
Lift core
Link to tower 4 clipped onto existing bridge
Security point overlooking bridge and street
Signal tower to service both train stations
Extension to Esplanade Station
Viewing platforms
Water purification tank
Water storage tanks

Pavilion 4

Informal trade and store area
Toilets
Lift core
Security point overlooking bridge
Viewing platforms
Water purification tank
Water storage tanks
Services to reclaimed land site works:
- Site office
- locker rooms with showers
- Equipment store
- Electrical sub-station
- General store

Figure 85: Master plan of proposed route in relation to existing route. Specific programme allocated to the buildings location.

Points indicating pavilions

Proposed route

Existing route

Grid lines based on site movement

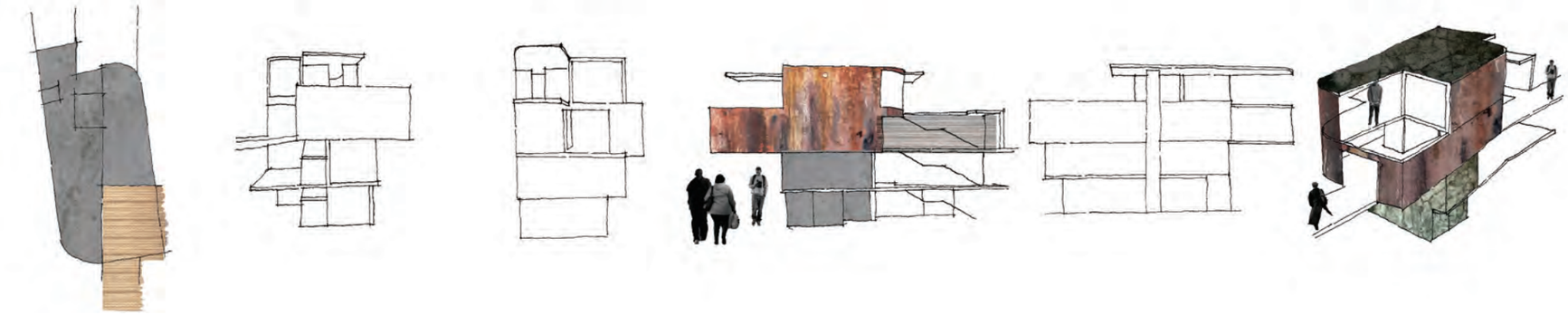
Weathered surfaces

Ground surface area

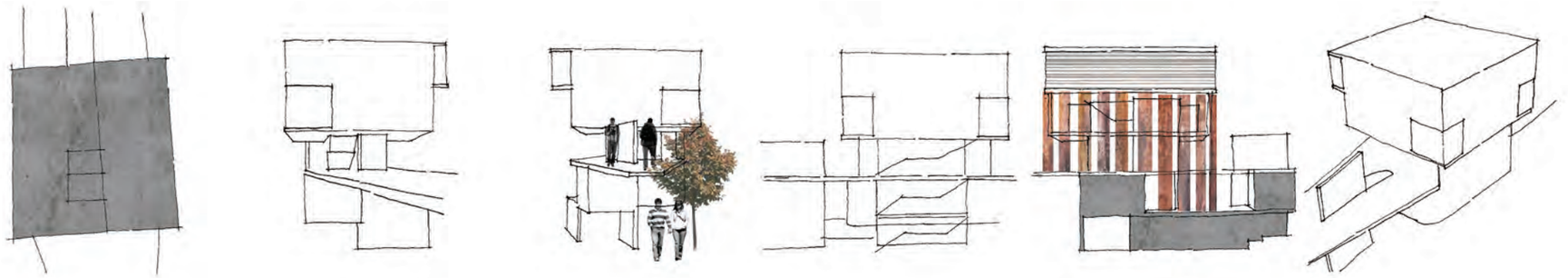
Figure 86: Points, lines and surfaces indicated along route. Gridlines are drawn from access points onto route.

Roof | North | South | East | West | 3D

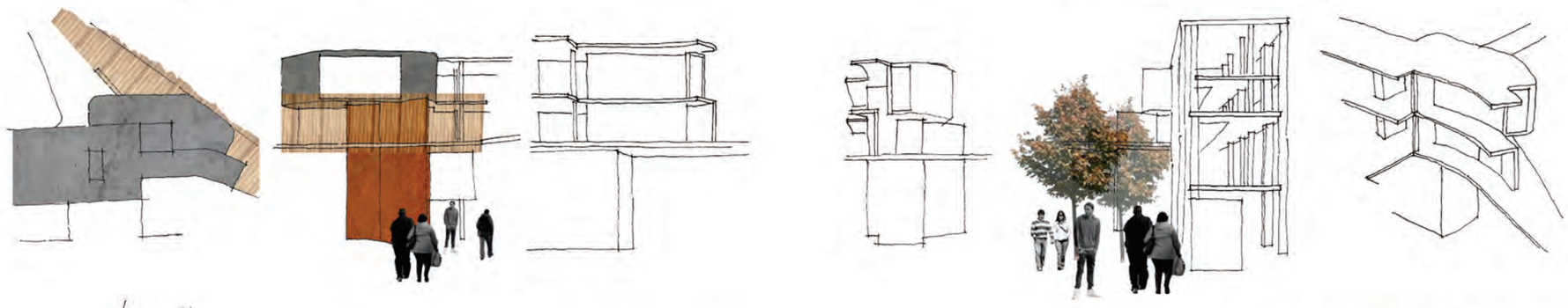
Pavilion 4



Pavilion 3



Pavilion 2



Pavilion 1

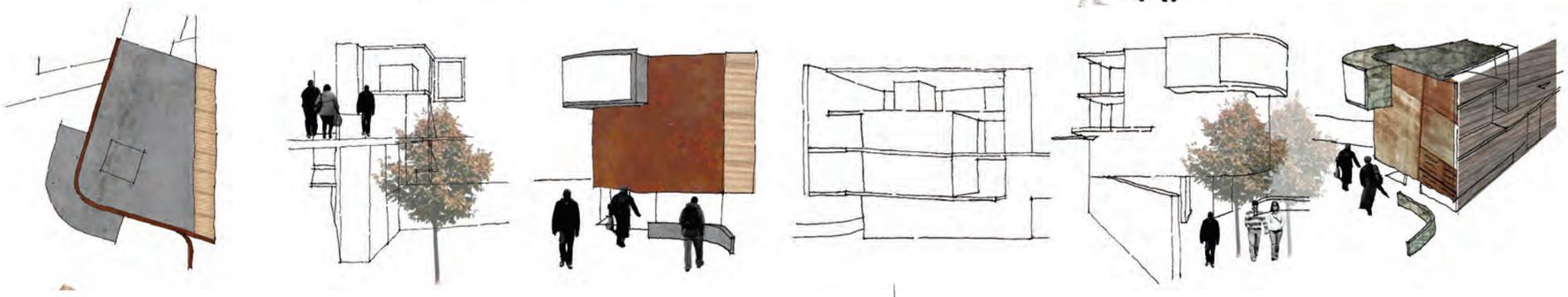
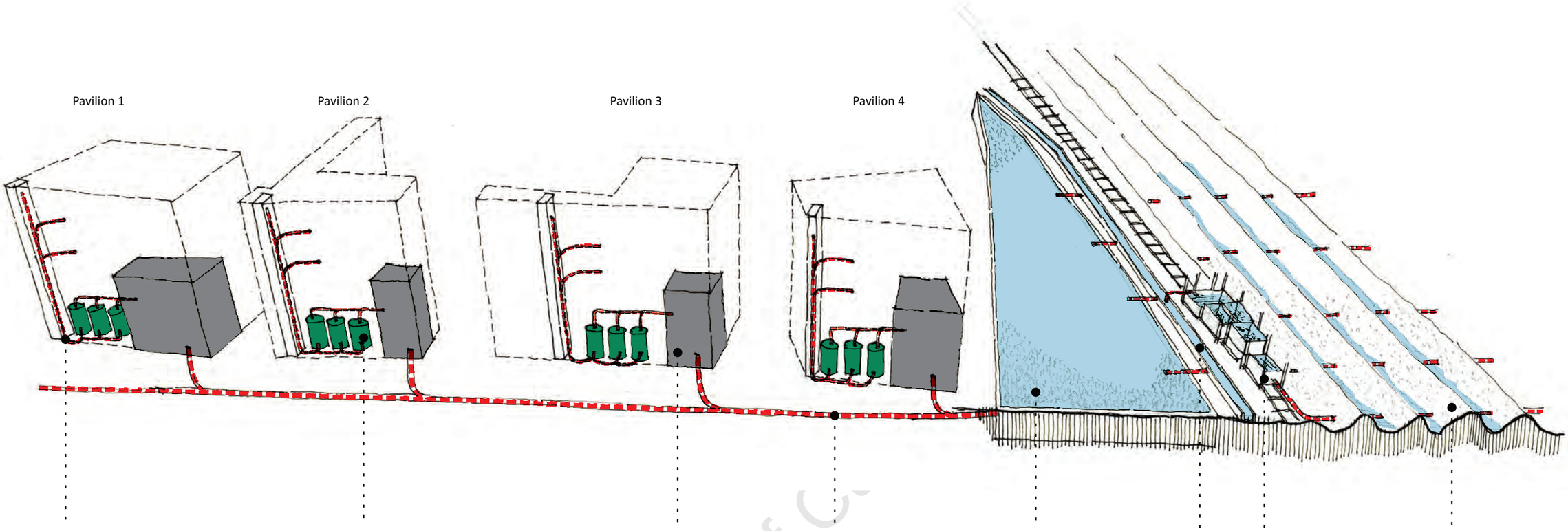


Figure 87: Catalogue representation of pavilions elevations in a weathered state, occupied by commuters - by author



Water distribution line to all toilets, taps and drinking fountains

JoJo water storage tanks located in all buildings to store water and feed entire building after UV cleaning process.

Concrete water storage boxes located in every building. Water enters boxes and cleaned under UV light for approximately 48 hours. UV light cleans water making it drinkable.

Distribution line to all buildings along scheme

Detention pond with bacteria eating plants to rid water of bacteria. Pond covered with metal grating to avoid solids from entering.

Concrete channel running entire length of reclaimed land, channel to exit at detention pond. Channel referenced to historical shorelines.

Treatment train:

Stage 1: gross pollutant trap, solid materials and litter

Stage 2: rock filter, water pumped from underneath removal of remaining solids semi slow process

Stage 3: sand filter, overflow from rock filter, remaining solid are collected below and water collected on surface, slow process.

Stage 4: detention pond, remaining solids sinks to base clean water then pumped into water channel.

Reclaimed land, mounds are drawn from standing trains in engineering yard. Ground dug out to collect ground water and pumped into treatment trains.

Figure 88: Water purification system and treatments train. System feeds all buildings from reclaimed land ground water - by author

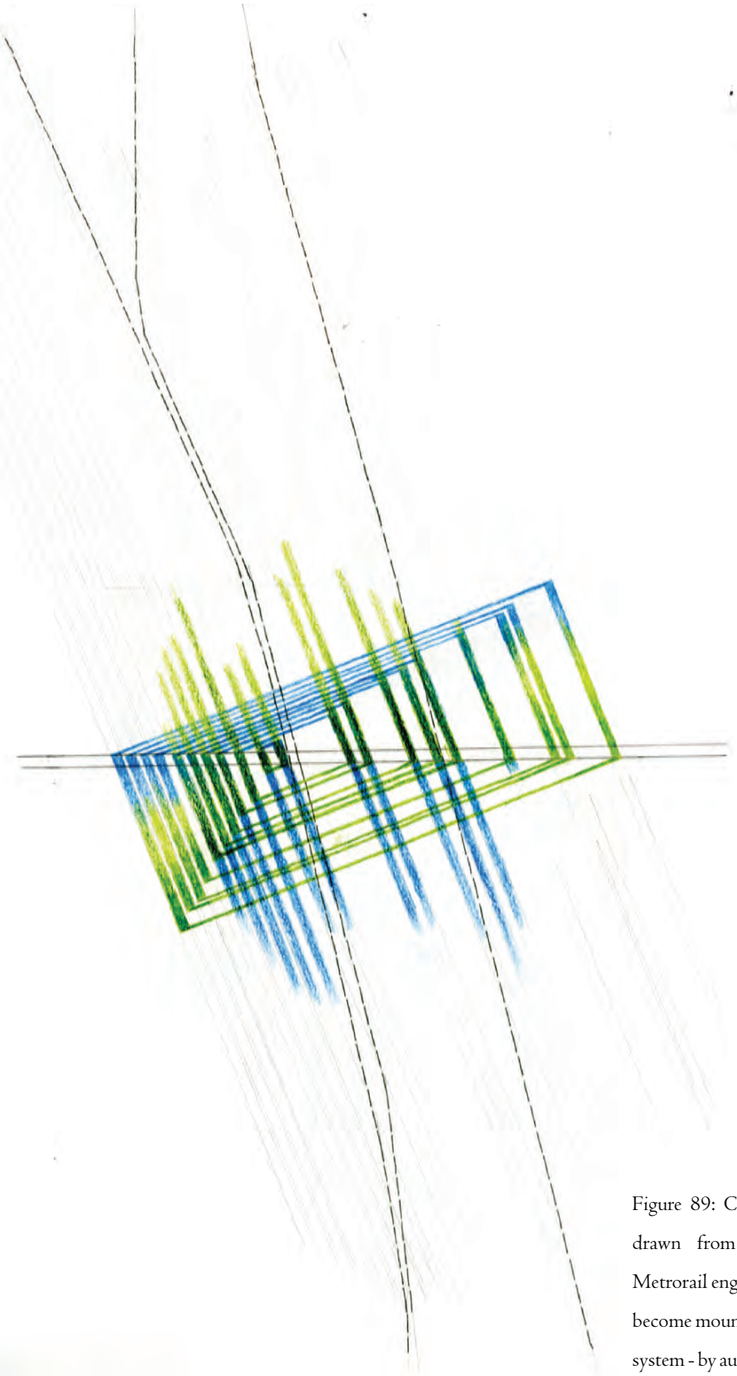
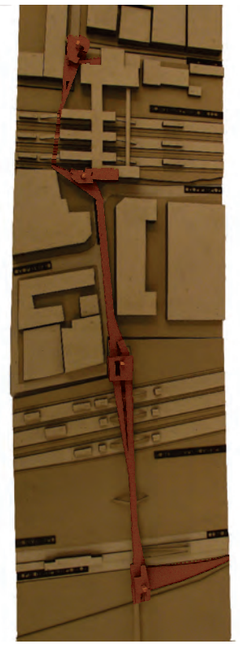
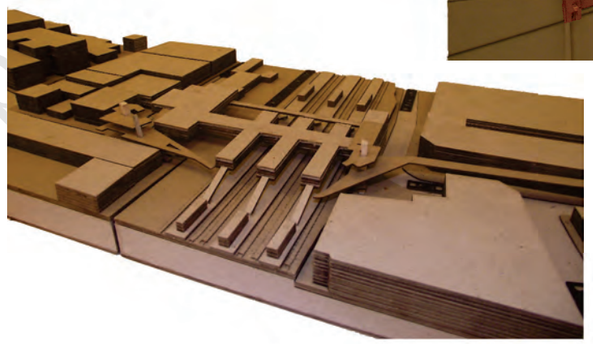
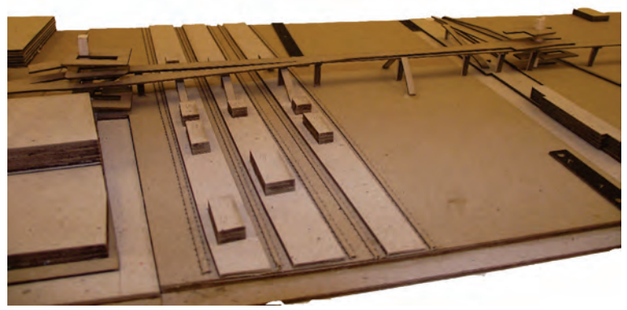


Figure 89: Constructed landscape, drawn from standing trains at Metrorail engineering yard. Lines to become mounds for water treatment system - by author







(above left) Figure 90: view of scheme from pavilion 1 - by author

(above right) Figure 91: overall view of scheme in plan - by author

(centre)Figure 92: relationship between pavilion 1 and 2 - by author

(below) Figure 93: relationship between pavilion 3 and 4 - by author

Conclusion

The moments that exist along the current route, in its own richness contribute to the character of Woodstock. The historical references, movement networks, spatial arrangements etc. are all disjunctions that exist in the life of a daily user. However, the contribution of weathering in my opinion is a tool that can be adapted to further heighten the disjunctive process. The sole purpose of the route is to move between points, by making the movement network a constant levelled spine; this would allow an opportunity to create disjunction in the spaces that filter off the route. These moments of contemplation become the opportunities for understanding the architectural intention of a space.

The fast-paced movement between the existing moments on site is a key design informant for accentuating the idea of weathering. Through this process, the environment becomes indirect contributors of character to the architecture of the route. Over time, these contributions will become the generators of the characters of a specific node, thus anchoring the building to give its location a sense of meaning. The constant surveillance towers further heighten the experience and nodal point of the pavilions.

The project does not aim to disrupt the route; in fact, it is more about simplifying the circulation. Each pavilion is designed to become weathered nodes along the route, which in its form disrupt the flow of people. It is important to provide such infrastructure to a busy landmark in Woodstock; this in turn could then become the starting points of future development for the suburb.

Figure references

Unless otherwise stated, all diagrams, drawings and images are by the author.

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Figure 29: South African National Library [accessed 22/07/2013]

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Figure 38: Flickr [image] 2008. Retrieved October 12, 2013. From http://www.flickr.com/photos/26222257@N07/4704028910/

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Figure 41: Topos [image] 2012. Retrieved September 06, 2013. From http://www.toposmagazine.com/blog/learning-from-la-villette-from-frogs-to-follies.html

Figure 42: Cape Archives Collection. In Radcliffe, A. S., 2012. *Recovering the manufactured site: A science park in Culemborg*, M.Arch (Prof) thesis: UCT

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